

1992 Census of Manufactures

MC92-I-27B

INDUSTRY SERIES

Commercial Printing and Manifold Business Forms

Industries 2752, 2754, 2759, and 2761



1992 Census of Manufactures

MC92-I-27B

INDUSTRY SERIES

Commercial Printing and Manifold Business Forms

Industries 2752, 2754, 2759, and 2761

+



+



U.S. Department of Commerce

Ronald H. Brown, Secretary

David J. Barram, Deputy Secretary

Economics and Statistics Administration

**Everett M. Ehrlich, Under Secretary
for Economic Affairs**

BUREAU OF THE CENSUS

Martha Farnsworth Riche, Director

Acknowledgments

Many persons participated in the various activities of the 1992 Census of Manufactures. The overall planning and review of the census operations were performed by the Economic Census Staff of the Economic Planning and Coordination Division.

Manufacturing and Construction Division prepared this report. **David W. Cartwright**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination of the census of manufactures. Planning and implementation were under the direction of **Michael Zampogna**, Chief, Wood and Chemical Products Branch, assisted by **Allen Foreman**, Section Chief, with primary staff assistance by **Susan Sundermann**.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, provided the mathematical and statistical techniques as well as the coverage operations.

Baruti A. Taylor, under the direction of **A. William Visnansky**, Chief, Special Reports Branch, performed overall coordination of the publication process. **Julius Smith, Jr.** and **Andrew W. Hait** provided primary staff assistance.

The Economic Planning and Coordination Division provided the computer processing procedures. **Shirin A. Ahmed**, Assistant Chief for Post Data Collection Processing, was responsible for editing and the analysts' interactive database review and correction system. Design and specifications were prepared under the supervision of **Dennis L. Wagner**, Chief, Post Collection Census Branch, assisted by **S. Mark Schmidt** and **Robert A. Rosati**.

The staff of the Data Preparation Division, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler, Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, was responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufactures and Construction Branch, assisted by **Gerald S. Turnage**, supervised the preparation of the computer programs.

Computer Services Division, **Marvin D. Raines**, Chief, performed the computer processing.

The staff of the Administrative and Publications Services Division, **Walter C. Odom**, Chief, performed publication planning, design, composition, editorial review, and printing planning and procurement for publications and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Special acknowledgment is also due the many businesses whose cooperation has contributed to the publication of these data.

If you have any questions concerning the statistics in this report, call 301-457-4810.



**Economics and Statistics
Administration**

Everett M. Ehrlich, Under Secretary
for Economic Affairs



BUREAU OF THE CENSUS

Martha Farnsworth Riche, Director
Harry A. Scarr, Deputy Director

Paula J. Schneider, Principal Associate
Director for Programs

Frederick T. Knickerbocker, Associate
Director for Economic Programs

Thomas L. Mesenbourg, Assistant Director
for Economic Programs

**ECONOMIC PLANNING AND COORDINATION
DIVISION**

John P. Govoni, Chief

MANUFACTURING AND CONSTRUCTION DIVISION

David W. Cartwright, Chief

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions.

Policymaking agencies of the Federal Government use the data, especially in monitoring economic activity and providing assistance to business.

State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.

Trade associations study trends in their own and competing industries and keep their members informed of market changes.

Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

AUTHORITY AND SCOPE

Title 13 of the United States Code (sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7. The 1992 Economic Census consists of the following eight censuses:

- Census of Retail Trade
- Census of Wholesale Trade
- Census of Service Industries
- Census of Financial, Insurance, and Real Estate Industries
- Census of Transportation, Communications, and Utilities
- Census of Manufactures
- Census of Mineral Industries
- Census of Construction Industries

Special programs also cover enterprise statistics and minority-owned and women-owned businesses. (The 1992 Census of Agriculture and 1992 Census of Governments are conducted separately.) The next economic census is scheduled to be taken in 1998 covering the year 1997.

AVAILABILITY OF THE DATA

The results of the economic census are available in printed reports for sale by the U.S. Government Printing Office and on compact discs for sale by the Census Bureau. Order forms for all types of products are available on request from Customer Services, Bureau of the Census, Washington, DC 20233-8300. A more complete description of publications being issued from this census is on the inside back cover of this document.

Census facts are also widely disseminated by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. Finally, State data centers in every State as well as business and industry data centers in many States also supply economic census statistics.

WHAT'S NEW IN 1992

The 1992 Economic Census covers more of the economy than any previous census. New for 1992 are data on communications, utilities, financial, insurance, and real estate, as well as coverage of more transportation industries. The economic, agriculture, and governments censuses now collectively cover nearly 98 percent of all economic activity.

Among other changes, new 1992 definitions affect the boundaries of about a third of all metropolitan areas. Also, the Survey of Women-Owned Businesses has now been expanded to include all corporations.

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1963, 1958, and 1954. Prior to that time, the individual subcomponents of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for 1840 and subsequent censuses to include mining and some commercial activities. In 1902, Congress established a permanent Census Bureau and directed that a census of manufactures be taken every 5 years. The 1905 Manufactures Census was the first time a census was taken apart from the regular every-10-year population census.

The first census of business was taken in 1930, covering 1929. Initially it covered retail and wholesale trade and construction industries, but it was broadened in 1933 to include some of the service trades.

The 1954 Economic Census was the first census to be fully integrated—providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires. The Enterprise Statistics Program, which publishes combined data from the economic census, was made possible with the implementation of the integrated census program in 1954.

The range of industries covered in the economic censuses has continued to expand. The census of construction industries began on a regular basis in 1967, and the scope of service industries was broadened in 1967, 1977, and 1987. The census of transportation began in 1963 as a set of surveys covering travel, transportation of commodities, and trucks, but expanded in 1987 to cover business establishments in several transportation industries. For 1992, these statistics are incorporated into a broadened census of transportation, communications, and utilities. Also new for 1992 is the census of financial, insurance, and real estate industries. This is part of a gradual expansion in coverage of industries previously subjected to government regulation.

The Survey of Minority-Owned Business Enterprises was first conducted as a special project in 1969 and was incorporated into the economic census in 1972 along with the Survey of Women-Owned Businesses.

An economic census has also been taken in Puerto Rico since 1909, in the Virgin Islands of the United States and Guam since 1958, and in the Commonwealth of the Northern Mariana Islands since 1982.

Statistical reports from the 1987 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census data published since 1967 are still available for sale on microfiche from the Census Bureau.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

While the census provides complete enumerations every 5 years, there are many needs for more frequent data as well. The Census Bureau conducts a number of monthly, quarterly, and annual surveys, with the results appearing in publication series such as Current Business Reports (retail and wholesale trade and service industries), the Annual Survey of Manufactures, Current Industrial Reports, and the Quarterly Financial Report. Most of these surveys, while providing more frequent observations, yield less kind-of-business and geographic detail than the census. The County Business Patterns program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1992 Economic Census and Related Statistics*. More information on the methodology, procedures, and history of the census will be published in the *History of the 1992 Economic Census*. Contact Customer Services for information on availability.

Census of Manufactures

GENERAL

This report, from the 1992 Census of Manufactures, is one of a series of 83 industry reports, each of which provides statistics for individual industries or groups of related industries. Additional separate reports will be issued for each State and the District of Columbia and for special subjects such as manufacturers' shipments to the federal government and concentration ratios in manufacturing.

The industry reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, capital expenditures, product shipments, etc.

State reports present similar statistics for each State and its important metropolitan areas (MA's), counties, and places. Selected statistical totals for "all manufacturing" have been shown in the State reports for MA's with 250 employees or more and for counties and places with 500 employees or more.

The *General Summary* report contains industry, product class, and geographic area statistics summarized in one report. The introduction to the *General Summary* discusses, at greater length, many of the subjects described in this introduction. For example, the *General Summary* text discusses the relationship of value added by manufacture to national income by industry of origin, the changes in statistical concepts over the history of the censuses, and the valuation problems arising from intracompany transfers between manufacturing plants of a company and between manufacturing plants and sales offices and sales branches of a company.

SCOPE OF CENSUS AND DEFINITION OF MANUFACTURING

The 1992 Census of Manufactures covers all establishments with one paid employee or more primarily engaged in manufacturing as defined in the *1987 Standard Industrial Classification (SIC) Manual*¹. This is the system of industrial classification developed by experts on classification in Government and private industry under the guidance of the Office of Information and Regulatory Affairs, Office of

¹*Standard Industrial Classification Manual: 1987*. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

Management and Budget. This classification system is used by Government agencies as well as many organizations outside the Government.

The SIC Manual defines manufacturing as the mechanical or chemical transformation of substances or materials into new products. The assembly of component parts of products also is considered to be manufacturing if the resulting product is neither a structure nor other fixed improvement. These activities are usually carried on in plants, factories, or mills that characteristically use power-driven machines and materials-handling equipment.

Manufacturing production is usually carried on for the wholesale market, for transfers to other plants of the same company, or to the order of industrial users rather than for direct sale to the household consumer. Some manufacturers in a few industries sell chiefly at retail to household consumers through the mail, through house-to-house routes, or through salespersons. Some activities of a service nature (enameling, engraving, etc.) are included in manufacturing when they are performed primarily for trade. They are considered nonmanufacturing when they are performed primarily to the order of the household consumer.

RELATIONSHIP BETWEEN ANNUAL SURVEY OF MANUFACTURES AND CENSUS OF MANUFACTURES

The Bureau of the Census conducts the annual survey of manufactures (ASM) in each of the 4 years between the censuses of manufactures. The ASM is a probability-based sample of approximately 62,000 establishments and collects the same industry statistics (employment, payroll, value of shipments, etc.) as the census of manufactures. In addition to collecting the information normally requested on the census form, the establishments in the ASM sample are requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, costs of purchased services, and foreign content of materials consumed. Except for supplemental labor costs, the extra ASM items are collected only in census years.

ESTABLISHMENT BASIS OF REPORTING

The census of manufactures is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each

location. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1992, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company (see Auxiliaries).

MANUFACTURING UNIVERSE AND CENSUS REPORT FORMS

The 1992 Census of Manufactures universe includes approximately 380,000 establishments. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures. The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. **Small single-establishment companies not sent a report form.** In the 1992 Census of Manufactures, approximately 143,000 small single-establishment companies were excused from filing reports. Selection of these small establishments was done on an industry-by-industry basis and was based on annual payroll and total shipments data as well as on the industry classification codes contained in the administrative records of Federal agencies. The cutoffs were selected so that these administrative-records cases would account for no more than 3 percent of the value of shipments for all manufacturing. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms.

Information on the physical location of the establishment, as well as information on payrolls, receipts (shipments), and industry classification, was obtained from the administrative records of other Federal agencies under special arrangements, which safeguarded their confidentiality. Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials

were not distributed among specific products and materials for these establishments but were included in the product and material "not specified by kind" (n.s.k.) categories.

The industry classification codes included in the administrative-records files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded at the four-digit SIC level. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes these administrative-records cases were only given a two- or three-digit SIC group. For the 1992 Census of Manufactures, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the four-digit SIC level. Establishments that did not return the classification form were coded later to those four-digit SIC industries identified as "not elsewhere classified" (n.e.c.) within the given two- or three-digit industry groups.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. **Establishments sent a report form.** The over 237,000 establishments covered in the mail canvass were divided into three groups:

- a. **ASM sample establishments.** This group consisted of approximately 62,000 establishments covering all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size (see Appendix B, Annual Survey of Manufactures).

In a census of manufactures year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services. See appendix A, section 2, for an explanation of these items.

The census part of the report form is 1 of approximately 200 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of these many forms to canvass the 459 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to be performing. Respondents were requested to identify the products, the value of each product, and, in a large number of cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry, which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant material not identified on the form.

Finally, a wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

- b. **Large and medium establishments (non-ASM).** Approximately 112,000 establishments were included in this group. A variable cutoff, based on administrative-records payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the approximately 200 census of manufactures regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.
- c. **Small single-establishment companies (non-ASM).** This group consisted of approximately 63,000 establishments. For those industries where application of the variable cutoff for administrative-records cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or "short" form was used. These establishments received 1 of the approximately 80 versions of the short form, which requested summary product and

material data and totals but no details on employment, payrolls, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics; the same data were collected on the short form as on the long form. However, detailed information on materials consumed was not collected on the short form; thus its use would increase the value of the n.s.k. categories.

AUXILIARIES

In this industry report, the data on employment and payroll are limited to operating manufacturing establishments. The census report form filed for auxiliaries (ES-9200) requested a description of the activity of the establishments serviced. However, the manufacturing auxiliaries were coded only to the two-digit major group of the establishments they served; whereas, the operating establishments were coded to a four-digit manufacturing industry. Data for the approximately 11,000 separately operated auxiliaries are included in the geographic area series and in a report issued as part of the 1992 Enterprise Statistics Survey.

Auxiliaries are establishments whose employees are primarily engaged in performing supporting services for other establishments of the same company, rather than for the general public or for other business firms. They can be at different locations from the establishments served or at the same location as one of those establishments but not operating as an integral part thereof and serving two establishments or more. Where auxiliary operations are conducted at the same location as the manufacturing operation and operate as an integral part thereof, they usually are included in the report for the operating manufacturing establishment.

Included in the broad category of auxiliaries are administrative offices. Employees in administrative offices are concerned with the general management of multiestablishment companies, i.e., with the general supervision and control of two units or more, such as manufacturing plants, mines, sales branches, or stores. The functions of these employees may include the following:

1. Program planning, including sales research and coordination of purchasing, production, and distribution
2. Company purchasing, including general contracts and purchasing methods
3. Company financial policy and accounting
4. General engineering, including design of product machinery and equipment, and direction of engineering effort conducted at the individual operation locations
5. Company personnel matters
6. Legal and patent matters

Other types of auxiliaries serving the plants or central management of the company include purchasing offices, sales promotion offices, research and development organizations, etc.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the census was classified in 1 of 459 manufacturing industries in accordance with the industry definitions in the 1987 SIC Manual. The 1987 edition of this manual represents a major revision for manufacturing industries from the 1972 edition and its 1977 supplement. Appendix A of the 1987 Manual notes the revisions in the four-digit industry levels between 1972/77 and 1987.

An industry is generally defined as a group of establishments producing the same product or a closely related group of products. The product groupings from which industry classifications are derived are based on considerations such as similarity of manufacturing processes, types of materials used, types of customers, and the like. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees. The system operates in such a way that the definitions progressively become narrower with successive additions of numerical digits. For 1992, there are 20 major groups (two-digit SIC), 139 industry groups (three-digit SIC), and 459 industries (four-digit SIC). This represents an expansion of four-digit industries from 452 in 1972/77 and a reduction of three-digit groups from 143 in 1972/77. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are about 11,000 products identified by a seven-digit code. The seven-digit products are considered the primary products of the industry with the same four digits.

Accordingly, an establishment is usually classified in a particular industry on the basis of its major activity during a particular year, i.e., production of the products primary to that industry exceeds, in value, production of the products primary to any other single industry. In a few instances, however, the industry classification of an establishment is not only determined by the products it makes but also by the process employed in operations. Refining of nonferrous metals from ore or rolling and drawing of nonferrous metals (processes which involve heavy capitalization in specialized equipment) would be classified according to the process used during a census year. These establishments then would be "frozen" in that industry during the following ASM years.

In either a census or ASM year, establishments included in the ASM sample with certainty weight, other than those involved with heavily capitalized activities described above, are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year (see Appendix B, Annual Survey of Manufactures). However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that, at the aggregate level, some industries comprise different mixes of establishments between survey years and establishment data for such industry statistics as employment and payroll may be tabulated in different industries between survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the four-digit SIC level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-records cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

While some establishments produce only the primary products of the industry in which they are classified, all establishments of an industry rarely specialize to this extent. The industry statistics (employment, inventories, value added by manufacture, total value of shipments including resales and miscellaneous receipts, etc.) shown in tables 1a through 5a, therefore, reflect not only the primary activities of the establishments in that industry but also their secondary activities. The product statistics in table 6a represent the output of all establishments whether or not they are classified in the same industry as the product. For this reason, in relating the industry statistics, especially the value of shipments to the product statistics, the composition of the industry's output shown in table 5b should be considered.

The extent to which industry and product statistics may be matched with each other is measured by two ratios which are computed from the figures shown in table 5b. The first of these ratios, called the primary product specialization ratio, measures the proportion of product shipments (both primary and secondary) of the establishments classified in the industry represented by the primary products of those establishments. The second ratio, called the coverage ratio, is the proportion of primary products shipped by the establishments classified in the industry to total shipments of such products by all manufacturing establishments.

However, establishments making products falling into the same industry category may use a variety of processes and materials to produce them. Also, the same industry classification (based on end products) may include both establishments that are highly integrated and those that

put only the finishing touches on an already highly fabricated item. For example, the refrigeration equipment industry includes instances of almost complete integration (production of the compressor, condensing unit, electric motor, casting, stamping of the case, and final assembly) all carried on at one plant. On the other hand, the condensing unit, the motor, and the case may be purchased and only assembled into the finished product.

In some instances, separate industry categories have been established for integrated and nonintegrated establishments. For other industries, the census provides separate statistics on the production of intermediate commodities made and used in the producing plant. For some industries characterized by many plants of the same company, separate figures on interplant transfers of products usually are shown.

Differences in the integration of production processes, types of operations, and alternatives in types of materials used should be considered when relating the industry statistics (employment, payrolls, value added, etc.) to the product and material data.

VALUE OF SHIPMENTS FOR THE INDUSTRY COMPARED WITH VALUE OF PRODUCT SHIPMENTS

This report shows value of shipments data for industries and products. In tables 1a through 5b, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in table 6a represents the total value of all products shipped that are classified as primary to an industry.

CENSUS DISCLOSURE RULES

In accordance with Federal law governing census reports, no data are published that would disclose the data for an individual establishment or company. However, the number of establishments classified in a specific industry is not considered a disclosure, so this information may be released even though other information is withheld.

The disclosure analysis for the industry statistics in tables 1a through 5a of this report is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for new capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for new capital expenditures that can be suppressed even though value of shipments data are publishable.

SPECIAL TABULATIONS

Special tabulations of data collected in the 1992 Census of Manufactures may be obtained on computer diskette or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief, Manufacturing and Construction Division, Bureau of the Census, Washington, DC 20233.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in this publication:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
- (NA) Not available.
- (NC) Not comparable.
- (S) Withheld because estimate did not meet publication standards.
- (X) Not applicable.
- (Z) Less than half the unit shown.
- n.e.c. Not elsewhere classified.
- n.s.k. Not specified by kind.
- pt. Part.
- r Revised.
- SIC Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

CONTACTS FOR DATA USERS

Subject Area	Contact	Phone
Census, ASM, and CIR		
SIC's 20-23, 3021, 31	Judy Dodds	301-457-4651
SIC's 24-30 (exc. 3021), 32	Michael Zampogna	301-457-4810
SIC's 33-35 (exc. 357)	Kenneth Hansen	301-457-4755
SIC's 357, 36-39	Bruce Goldhirsch	301-457-4817
Import/ export publications	Foreign Trade Division	301-457-3041
Industry analysis and forecasting	International Trade Administration	202-377-4356

Users' Guide for Locating Statistics in This Report by Table Number

[For explanation of terms, see appendixes]

Item	Four-digit industry statistics							Five-digit product class and seven-digit product statistics			
	Historical	Operating ratios	By geographic area	Summary and supplemental	By employment size	By industry and product class specialization	Materials consumed by kind	Industry-product analysis	Product shipments	Product class by geographic area	Historical product class
Number of companies	1a			3a					*6a		
Number of establishments	1a		2	3a	4	5a					
Employment and payroll:											
Number of employees	1a	1b	2	3a	4	5a					
Payroll	1a	1b	2	3a	4	5a					
Supplemental labor costs . . .				3a							
Production workers	1a	1b	2	3a	4	5a					
Production-worker hours	1a	1b	2	3a	4	5a					
Production-worker wages	1a	1b	2	3a	4	5a					
Shipments, cost of materials, and value added:											
Value of shipments (four-digit)	1a	1b	2	3a	4	5a		5b			
Product class shipments (five-digit)									6a	6b	6c
Product shipments (seven-digit)									6a		
Value added by manufacture	1a	1b	2	3a	4	5a					
Cost of materials	1a	1b	2	3a	4	5a					
Fuels and electric energy				3a							
Materials consumed by kind							7				
Inventories:											
Total, end of year	1a			3a	4						
By stage of fabrication				3a							
Capital expenditures, assets, rental payments, and purchased services:											
New capital expenditures	1a		2	3b	4	5a					
Used plant and equipment expenditures				3b							
Gross assets				3b							
Depreciation				3b							
Retirements of buildings and machinery				3b							
Rental payments				3b							
Foreign content of materials consumed				3c							
Purchased services				3c							
Ratios:											
Specialization	1a							5b			
Coverage	1a							5b			

*Number of companies with shipments of more than \$100 thousand.

Contents

Commercial Printing and Manifold Business Forms

[Page numbers listed here omit the prefix that appears as part of the number of each page]

	Page
Introduction to the Economic Census.....	III
Census of Manufactures	V
Users' Guide for Locating Statistics in This Report by Table Number	X
Description of Industries and Summary of Findings	3

TABLES

Industry Statistics

1a. Historical Statistics for the Industry: 1992 and Earlier Years.....	7
1b. Selected Operating Ratios for the Industry: 1992 and Earlier Years	8
2. Industry Statistics for Selected States: 1992 and 1987	8
3a. Summary Statistics for the Industry: 1992	11
3b. Gross Book Value of Depreciable Assets, Capital Expenditures, Retirements, Depreciation, and Rental Payments: 1992	12
3c. Supplemental Industry Statistics Based on Sample Estimates: 1992	12
4. Industry Statistics by Employment Size of Establishment: 1992	13
5a. Industry Statistics by Industry and Primary Product Class Specialization: 1992 ...	14

Product Statistics

5b. Industry-Product Analysis-Value of Industry and Primary Product Shipments; Specialization and Coverage Ratios: 1992 and Earlier Census Years	14
6a. Product and Product Classes-Value of Shipments by All Producers: 1992 and 1987	16
6b. Product Classes-Value of Shipments by All Producers for Specified States: 1992 and 1987	20
6c. Historical Statistics for Product Classes-Value Shipped by All Producers: 1992 and Earlier Years	24

Material Statistics

7. Materials Consumed by Kind: 1992 and 1987	24
--	----

APPENDIXES

A. Explanation of Terms	A-1
B. Annual Survey of Manufactures Sampling and Estimating Methodologies	B-1
C. Product Code Reference Tables	C-1

Publication Program.....	Inside back cover
--------------------------	-------------------

Description of Industries and Summary of Findings

This report shows 1992 Census of Manufactures statistics for establishments classified in each of the following industries:

SIC code and title

2752	Commercial Printing, Lithographic
2754	Commercial Printing, Gravure
2759	Commercial Printing, N.E.C.
2761	Manifold Business Forms

The industry statistics (employment, payroll, cost of materials, value of shipments, inventories, etc.) are reported for each establishment as a whole. Aggregates of such data for an industry reflect not only the primary activities of the establishments but also their activities in the manufacture of secondary products as well as their miscellaneous activities (contract work on materials owned by others, repair work, etc.). This fact should be taken into account in comparing industry statistics (tables 1 through 5a) with product statistics (table 6) showing shipments by all industries of the primary products of the specified industry. The extent of the "product mix" is indicated in table 5b, which shows the value of primary and secondary products shipped by establishments classified in the specified industry and the value of primary products of the industry shipped as secondary products by establishments classified in other industries.

Establishment data were tabulated based on industry definitions included in the *1987 Standard Industrial Classification (SIC) Manual*¹. The 1987 edition represents a major revision for manufacturing industries from the 1972 edition and its 1977 supplement. In addition to the 1987 SIC revision, changes were made to the product class (five-digit) and product code (seven-digit) categories. The product class and product code comparability between the 1992 and 1987 censuses is shown in appendix C. This appendix presents, in tabular form, the linkage from 1992 to 1987, and 1987 to 1992.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

¹*Standard Industrial Classification Manual: 1987*. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC

This industry is made up of establishments primarily engaged in printing by the lithographic (offset) process. Establishments primarily engaged in book printing without publishing are classified in industry 2732, and greeting card printers in industry 2771. Establishments primarily engaged in preparing lithographic or offset plates and in related services are classified in industry 2796. Establishments primarily engaged in providing photocopying services are classified in service industries, industry 7334.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 2752, Commercial Printing, Lithographic, had employment of 439.9 thousand. The employment figure was 9 percent above the 403.9 thousand reported in 1987. Compared with 1991, employment increased 10 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were California, Illinois, New York, and Pennsylvania, accounting for approximately 31 percent of the industry's employment. These same States were the leaders in 1987 when they accounted for 33 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$43.6 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2752 shipped \$39.8 billion of products considered primary to the industry, \$2.4 billion of secondary products, and had \$1.4 billion of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 94 percent (specialization ratio). In 1987, the specialization ratio also was 94 percent.

Establishments in this industry also accounted for 94 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio also was 94 percent.

The products primary to industry 2752, no matter in what industry they were produced, appear in table 6a and

aggregate to \$42.4 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in this industry amounted to \$18.7 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 15 percent of the total value of shipments.

INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE

This industry is made up of establishments primarily engaged in gravure printing. Establishments primarily engaged in making and preparing plates for printing are classified in industry 2796.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 2754, Commercial Printing, Gravure, had employment of 21.5 thousand. The employment figure was 10 percent below the 23.8 thousand reported in 1987.

The leading States in employment in 1992 were Illinois, Tennessee, and Indiana. This represents a shift from 1987 when Illinois, Tennessee, and Pennsylvania were the leading States.

The total value of shipments for establishments classified in this industry was \$3.6 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2754 shipped \$3.1 billion of products considered primary to the industry, \$445.5 million of secondary products, and had \$43.0 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 87 percent (specialization ratio). In 1987, the specialization ratio was 85 percent.

Establishments in this industry also accounted for 89 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 94 percent.

The products primary to industry 2754, no matter in what industry they were produced, appear in table 6a and aggregate to \$3.4 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in this industry amounted to \$1.9 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 7 percent of the total value of shipments.

INDUSTRY 2759, COMMERCIAL PRINTING, N.E.C.

This industry is made up of establishments primarily engaged in commercial or job printing, not elsewhere classified, including letterpress, flexographic, and screen printing (except on textiles). It also includes establishments engaged in engraving printing and nonimpact printing. Establishments primarily engaged in screen printing on textiles are classified in Industry 2396, Automotive and Apparel Trimmings.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 2759, Commercial Printing, N.E.C., had employment of 107.3 thousand. The employment figure was 15 percent below the 125.8 thousand reported in 1987. Compared with 1991, employment decreased 20 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were California, Ohio, New York, and Illinois, accounting for approximately 33 percent of the industry's employment. These same States were the leaders in 1987 when they accounted for approximately 30 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$9.3 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2759 shipped \$8.2 billion of products considered primary to the industry, \$653.5 million of secondary products, and had \$459.3 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 93 percent (specialization ratio). In 1987, the specialization ratio was 92 percent.

Establishments in this industry also accounted for 89 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 87 percent.

The products primary to industry 2759, no matter in what industry they were produced, appear in table 6a and aggregate to \$9.2 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in this industry amounted to \$3.8 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 19 percent of the total value of shipments.

INDUSTRY 2761, MANIFOLD BUSINESS FORMS

This industry is made up of establishments primarily engaged in designing and printing, by any process, special forms for use in the operation of a business, in single and multiple sets, including carbonized or interleaved with carbon or otherwise processed for multiple reproduction. It also includes establishments engaged in the manufacture of manifold books, including pegboard accounting systems.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 2761, Manifold Business Forms, had employment of 47.9 thousand. The employment figure was 10 percent below the 53.3 thousand reported in 1987.

The leading States in employment in 1992 were Pennsylvania, California, Texas, and Illinois, accounting for approximately 32 percent of the industry's employment. These same States were the leaders in 1987 when they accounted for 33 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$7.4 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2761 shipped \$6.5 billion of products considered primary to the industry, \$498.7 million of secondary products, and had \$437.9 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 93 percent (specialization ratio). In 1987, the specialization ratio was 94 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 97 percent.

The products primary to industry 2761, no matter in what industry they were produced, appear in table 6a and aggregate to \$6.8 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the manifold business forms industry amounted to \$3.5 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 20 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 16 percent of the total value of shipments.

Table 1a. Historical Statistics for the Industry: 1992 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year ¹	All establishments ³			All employees		Production workers			Value added by manufac-ture ⁴ (million dollars)	Cost of materials ⁵ (million dollars)	Value of shipments (million dollars)	New capital expend-itures ⁶ (million dollars)	End-of-year inven-tories ⁴ (million dollars)	Ratios	
	Com-pa-nies ² (no.)	Total (no.)	With 20 employ-ees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Spe-cial-ization ⁷ (per-cent)	Cover-age ⁸ (per-cent)
INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC															
1992 Census ---	28 489	29 344	4 251	439.9	12 047.5	317.4	653.0	7 679.0	24 842.5	18 723.1	43 588.2	1 629.4	2 724.8	94	94
1991 ASM -----	(NA)	(NA)	(NA)	400.1	10 386.6	290.8	594.8	6 564.5	20 952.4	16 788.0	37 718.9	1 370.0	2 441.1	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	423.3	10 606.7	307.3	631.0	6 764.3	21 230.3	17 623.2	38 877.4	1 662.4	2 638.3	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	419.3	10 149.0	306.3	615.5	6 504.9	20 416.1	16 727.9	37 128.0	1 627.6	2 627.9	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	405.2	9 524.3	293.2	586.7	6 079.9	18 997.0	15 758.3	34 727.0	1 435.4	2 585.4	(NA)	(NA)
1987 Census ---	24 327	24 984	4 105	403.9	9 154.4	293.7	581.9	5 900.3	18 232.1	14 647.0	32 832.0	1 538.5	2 412.7	94	94
1986 ASM -----	(NA)	(NA)	(NA)	337.0	7 513.3	247.9	487.5	4 897.0	14 819.2	11 598.9	26 371.1	1 335.9	1 920.9	(NA)	(NA)
1985 ASM -----	(NA)	(NA)	(NA)	335.4	7 097.5	248.2	472.7	4 744.7	13 949.0	11 079.8	25 024.8	1 410.7	1 828.3	(NA)	(NA)
1984 ASM -----	(NA)	(NA)	(NA)	334.9	6 841.5	249.0	473.8	4 550.3	13 271.2	10 485.0	23 646.2	1 279.7	1 961.8	(NA)	(NA)
1983 ASM -----	(NA)	(NA)	(NA)	315.1	6 052.1	236.9	440.1	4 131.5	11 741.8	9 025.3	20 754.0	962.7	1 661.1	(NA)	(NA)
1982 Census ---	17 332	17 842	3 184	311.9	5 746.4	234.1	434.8	3 931.9	11 045.1	8 406.4	19 441.6	958.1	1 524.1	91	93
1981 ASM -----	(NA)	(NA)	(NA)	261.2	4 596.1	197.5	377.4	3 095.5	8 616.9	6 595.1	15 173.7	794.4	1 154.7	(NA)	(NA)
1980 ASM -----	(NA)	(NA)	(NA)	257.9	4 173.9	195.8	366.0	2 823.6	7 720.3	5 847.7	13 561.4	619.3	1 141.0	(NA)	(NA)
1979 ASM -----	(NA)	(NA)	(NA)	250.2	3 781.5	191.2	360.2	2 574.1	6 973.9	5 334.6	12 244.7	559.9	1 107.3	(NA)	(NA)
1978 ASM -----	(NA)	(NA)	(NA)	227.3	3 277.6	172.0	320.8	2 246.8	5 888.5	4 630.6	10 505.0	438.7	945.4	(NA)	(NA)
1977 Census ---	10 959	11 320	2 362	216.3	2 984.1	163.7	307.4	2 045.7	5 338.4	4 061.6	9 359.7	360.2	861.9	87	88
INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE															
1992 Census ---	401	431	90	21.5	726.2	17.9	38.8	561.9	1 690.9	1 860.9	3 560.5	170.4	274.0	87	89
1991 ASM -----	(NA)	(NA)	(NA)	22.0	693.7	17.9	39.0	527.2	1 670.0	1 839.9	3 506.0	136.3	277.4	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	23.9	700.4	19.5	40.5	522.1	1 742.0	1 883.4	3 635.9	176.1	288.6	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	23.2	688.2	18.9	39.7	512.9	1 476.2	1 983.4	3 467.6	178.7	297.6	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	24.0	693.2	19.4	39.7	521.2	1 520.1	1 901.8	3 432.1	183.9	327.6	(NA)	(NA)
1987 Census ---	304	332	91	23.8	668.5	19.1	39.6	494.2	1 534.2	1 545.5	3 059.8	175.5	292.8	85	94
INDUSTRY 2759, COMMERCIAL PRINTING, N.E.C.															
1992 Census ---	8 570	8 690	1 255	107.3	2 596.9	73.9	154.4	1 461.7	5 441.6	3 790.9	9 290.2	344.5	828.7	93	89
1991 ASM -----	(NA)	(NA)	(NA)	133.8	3 055.1	92.1	191.0	1 778.2	6 269.9	4 459.2	10 723.2	544.3	934.7	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	133.2	2 963.7	93.8	191.9	1 754.9	6 029.1	4 347.7	10 390.4	381.8	905.4	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	126.9	2 743.2	89.2	179.8	1 616.8	5 676.7	4 069.5	9 716.1	329.1	886.0	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	127.7	2 602.6	89.4	189.4	1 565.8	5 338.8	4 011.9	9 300.4	278.8	873.9	(NA)	(NA)
1987 Census ---	10 608	10 795	1 387	125.8	2 478.5	88.5	172.9	1 495.1	5 252.9	3 674.8	8 894.3	299.0	780.5	92	87
INDUSTRY 2761, MANIFOLD BUSINESS FORMS															
1992 Census ---	644	922	540	47.9	1 343.2	33.6	69.3	873.0	3 924.7	3 499.9	7 435.9	160.7	753.0	93	96
1991 ASM -----	(NA)	(NA)	(NA)	46.3	1 269.2	32.2	66.2	819.3	3 839.8	3 381.5	7 233.5	202.1	726.7	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	50.3	1 326.1	35.1	71.8	842.7	4 038.1	3 786.7	7 807.5	211.7	841.2	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	49.5	1 263.4	34.6	71.9	823.2	3 808.9	3 754.6	7 553.3	213.4	809.0	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	53.4	1 349.4	37.8	79.3	874.3	3 970.8	3 901.1	7 781.4	229.0	931.2	(NA)	(NA)
1987 Census ---	603	856	589	53.3	1 280.5	37.3	77.3	824.9	3 894.1	3 506.1	7 397.1	207.8	789.9	94	97
1986 ASM -----	(NA)	(NA)	(NA)	54.2	1 272.0	37.9	80.0	826.9	3 676.1	3 337.1	6 985.1	212.9	774.3	(NA)	(NA)
1985 ASM -----	(NA)	(NA)	(NA)	54.2	1 199.6	38.6	80.1	794.7	3 469.6	3 195.6	6 669.0	218.3	675.2	(NA)	(NA)
1984 ASM -----	(NA)	(NA)	(NA)	53.8	1 116.5	39.1	79.9	750.2	3 203.8	3 132.4	6 297.3	180.9	737.1	(NA)	(NA)
1983 ASM -----	(NA)	(NA)	(NA)	47.7	981.7	34.5	68.4	656.5	2 667.5	2 659.2	5 310.7	99.5	618.2	(NA)	(NA)
1982 Census ---	582	810	530	49.5	934.0	36.2	71.1	634.3	2 490.7	2 563.1	5 058.7	135.4	571.9	96	97
1981 ASM -----	(NA)	(NA)	(NA)	48.4	859.6	35.8	70.9	570.2	2 394.3	2 363.5	4 734.7	139.6	518.8	(NA)	(NA)
1980 ASM -----	(NA)	(NA)	(NA)	49.2	784.5	36.9	72.7	525.5	2 183.7	2 100.7	4 279.0	168.1	499.6	(NA)	(NA)
1979 ASM -----	(NA)	(NA)	(NA)	50.2	710.3	38.3	74.2	490.1	2 051.5	1 907.5	3 929.1	119.4	477.8	(NA)	(NA)
1978 ASM -----	(NA)	(NA)	(NA)	46.7	634.5	34.8	68.7	433.1	1 692.2	1 616.4	3 298.5	122.8	386.7	(NA)	(NA)
1977 Census ---	604	795	477	45.3	575.0	33.3	67.3	390.9	1 491.6	1 418.0	2 893.8	82.1	336.7	93	95

¹In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1977, see 1977 Census of Manufactures, vol. II, table 1 of the industry chapter.

²For the Census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during the year.

⁴Beginning in 1982, all respondents were requested to report their inventories at cost or market prior to adjustment to LIFO cost. This is a change from prior years when respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, 1982 data for inventories and value added by manufacture are not comparable to prior-year data.

⁵Cost of materials is the sum of five components: the cost of (1) parts used in the manufacture of finished goods (materials, parts, containers, and supplies incorporated into products or otherwise directly consumed in the process); (2) purchased items later resold without further manufacture; (3) fuels; (4) electricity; and (5) commissions or fees to outside parties for contract manufacturing. A separate cost for each of the five components is shown in table 3a. Detailed data on materials consumed by type, are shown in table 7.

⁶Detailed data on new machinery and equipment expenditures are provided in table 3c.

⁷Represents ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for establishments classified in the industry.

⁸Represents ratio of primary products shipped by establishments classified in industry to total shipments of such products by all manufacturing establishments, wherever classified.

Table 1b. Selected Operating Ratios for the Industry: 1992 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC									
1992 Census	27 387	72	2 057	11.76	43	71	56 473	48	38.04
1991 ASM	25 960	73	2 045	11.04	45	72	52 368	50	35.23
1990 ASM	25 057	73	2 053	10.72	45	73	50 154	50	33.65
1989 ASM	24 205	73	2 009	10.57	45	72	48 691	50	33.17
1988 ASM	23 505	72	2 001	10.36	45	73	46 883	50	32.38
1987 Census	22 665	73	1 981	10.14	45	72	45 140	50	31.33
1986 ASM	22 295	74	1 967	10.05	44	72	43 974	51	30.40
1985 ASM	21 161	74	1 905	10.04	44	73	41 589	51	29.51
1984 ASM	20 428	74	1 903	9.60	44	73	39 627	52	28.01
1983 ASM	19 207	75	1 858	9.39	43	73	37 264	52	26.68
1982 Census	18 424	75	1 857	9.04	43	73	35 412	52	25.40
1981 ASM	17 596	76	1 911	8.20	43	74	32 990	53	22.83
1980 ASM	16 184	76	1 869	7.71	43	74	29 935	54	21.09
1979 ASM	15 114	76	1 884	7.15	44	74	27 873	54	19.36
1978 ASM	14 420	76	1 865	7.00	44	75	25 906	56	18.36
1977 Census	13 796	76	1 878	6.65	43	75	24 681	56	17.37
INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE									
1992 Census	33 777	83	2 168	14.48	52	73	78 647	43	43.58
1991 ASM	31 532	81	2 179	13.52	52	72	75 909	42	42.82
1990 ASM	29 305	82	2 077	12.89	52	71	72 887	40	43.01
1989 ASM	29 664	81	2 101	12.92	57	77	63 629	47	37.18
1988 ASM	28 883	81	2 046	13.13	55	76	63 337	46	38.29
1987 Census	28 088	80	2 073	12.48	51	72	64 462	44	38.74
INDUSTRY 2759, COMMERCIAL PRINTING, N.E.C.									
1992 Census	24 202	69	2 089	9.47	41	69	50 714	48	35.24
1991 ASM	22 833	69	2 074	9.31	42	70	46 860	49	32.83
1990 ASM	22 250	70	2 046	9.14	42	70	45 264	49	31.42
1989 ASM	21 617	70	2 016	8.99	42	70	44 734	48	31.57
1988 ASM	20 381	70	2 119	8.27	43	71	41 807	49	28.19
1987 Census	19 702	70	1 954	8.65	41	69	41 756	47	30.38
INDUSTRY 2761, MANIFOLD BUSINESS FORMS									
1992 Census	28 042	70	2 063	12.60	47	65	81 935	34	56.63
1991 ASM	27 413	70	2 056	12.38	47	64	82 933	33	58.00
1990 ASM	26 364	70	2 046	11.74	49	65	80 280	33	56.24
1989 ASM	25 523	70	2 078	11.45	50	66	76 947	33	52.97
1988 ASM	25 270	71	2 098	11.03	50	67	74 360	34	50.07
1987 Census	24 024	70	2 072	10.67	47	65	73 060	33	50.38
1986 ASM	23 469	70	2 111	10.34	48	66	67 825	35	45.95
1985 ASM	22 133	71	2 075	9.92	48	66	64 015	35	43.32
1984 ASM	20 753	73	2 043	9.39	50	67	59 550	35	40.10
1983 ASM	20 581	72	1 983	9.60	50	69	55 922	37	39.00
1982 Census	18 869	73	1 964	8.92	51	69	50 317	37	35.03
1981 ASM	17 760	74	1 980	8.04	50	68	49 469	36	33.77
1980 ASM	15 945	75	1 970	7.23	49	67	44 384	36	30.04
1979 ASM	14 149	76	1 937	6.61	49	67	40 867	35	27.65
1978 ASM	13 587	75	1 974	6.30	49	68	36 236	37	24.63
1977 Census	12 693	74	2 021	5.81	49	69	32 927	39	22.16

Note: For qualifications of data, see footnotes on table 1a.

Table 2. Industry Statistics for Selected States: 1992 and 1987

[Excludes data for auxiliaries. States with 100 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1992										1987			
	E1	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ² (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC														
United States	E1	29 344	4 251	439.9	12 047.5	317.4	653.0	7 679.0	24 842.5	18 723.1	43 588.2	1 629.4	403.9	18 232.1
Alabama	-	332	39	4.1	92.1	3.0	6.0	61.3	209.0	187.2	395.1	15.5	3.8	148.8
Alaska	E2	39	4	.3	8.5	.2	.5	5.9	15.5	8.7	24.3	1.0	.3	14.2
Arizona	E2	515	53	5.0	118.0	3.6	7.2	74.9	229.2	162.9	392.4	13.9	4.0	147.6
Arkansas	-	175	24	2.5	59.2	1.8	3.7	39.0	114.5	105.0	217.3	11.0	2.1	85.4
California	E1	4 035	457	47.2	1 363.8	34.1	71.4	871.6	2 814.2	2 151.1	4 982.8	164.6	44.1	2 065.4

See footnotes at end of table.

27B-8 COMMERCIAL PRINT. & MANIFOLD BUS. FORMS

MANUFACTURES—INDUSTRY SERIES

Table 2. Industry Statistics for Selected States: 1992 and 1987—Con.

[Excludes data for auxiliaries. States with 100 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1992											1987		
	E ¹	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employ-ees ² (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC—Con.														
Colorado	E1	601	70	6.0	156.1	4.3	8.8	99.5	307.8	258.9	564.6	25.3	5.2	216.7
Connecticut	E1	472	82	7.1	220.8	5.0	10.5	137.9	427.9	307.4	737.0	30.3	8.7	410.7
Delaware	E2	66	10	.7	18.2	.5	1.0	10.9	30.0	18.2	48.2	1.1	.8	30.8
District of Columbia	E1	80	11	1.1	31.9	.8	1.6	20.1	55.9	42.4	97.8	2.1	1.2	59.2
Florida	E2	1 730	154	16.3	381.5	11.6	23.8	242.6	747.6	620.0	1 367.7	52.0	14.6	546.1
Georgia	E2	756	101	11.4	311.7	8.2	16.9	197.7	624.3	522.6	1 145.7	36.4	10.3	497.7
Hawaii	E2	78	13	1.0	29.5	.7	1.4	18.2	53.3	31.6	86.2	5.3	1.0	43.2
Idaho	E1	111	16	1.7	29.3	1.3	2.3	18.1	65.1	43.4	108.5	5.5	1.3	36.0
Illinois	E1	1 615	299	34.4	1 065.3	25.1	52.9	680.6	2 189.3	1 751.4	3 948.2	147.0	33.4	1 734.2
Indiana	E1	607	106	10.3	269.6	7.3	15.1	169.3	657.1	429.9	1 100.7	39.8	7.8	325.0
Iowa	E1	315	69	5.7	132.1	4.2	8.3	83.6	298.0	223.5	521.5	16.3	4.0	156.0
Kansas	E1	321	53	4.8	123.4	3.4	6.8	77.3	314.9	314.9	667.4	13.8	3.7	168.3
Kentucky	E1	286	48	7.0	182.9	5.3	10.3	125.5	427.2	296.1	725.3	24.4	6.0	287.9
Louisiana	E1	273	33	2.8	56.6	1.9	3.9	34.3	105.9	90.0	196.3	5.6	2.7	96.8
Maine	E1	124	14	1.5	35.1	1.2	2.4	23.1	64.8	65.1	130.3	5.3	G	(D)
Maryland	E1	539	114	10.3	322.8	7.4	15.6	208.8	599.3	463.7	1 062.1	31.6	11.1	506.2
Massachusetts	E1	760	130	12.0	356.5	8.5	17.5	218.3	689.4	500.9	1 190.0	41.8	12.8	575.7
Michigan	E1	1 033	148	14.4	391.4	10.3	21.3	248.1	888.2	705.9	1 599.2	51.6	13.4	591.6
Minnesota	E1	675	139	20.0	563.0	14.9	29.7	355.2	1 200.0	868.7	2 060.3	79.6	(NA)	(D)
Mississippi	E1	162	21	2.0	46.6	1.6	3.2	33.8	88.0	68.7	156.1	4.6	G	(D)
Missouri	E1	666	97	10.6	300.6	7.7	15.9	186.4	581.8	453.7	1 033.7	50.3	8.7	390.3
Montana	E1	79	11	.7	12.8	.5	1.0	8.7	26.7	16.4	43.6	2.5	.5	13.8
Nebraska	E2	194	31	3.4	83.1	2.6	5.1	57.8	155.9	146.0	301.1	19.1	3.2	114.5
Nevada	E4	103	14	1.1	27.1	.9	1.6	18.1	57.4	38.8	96.3	3.0	1.7	116.4
New Hampshire	E1	151	17	1.8	45.2	1.2	2.5	27.8	88.4	66.8	154.9	6.4	1.9	77.4
New Jersey	E2	1 091	162	17.5	565.8	12.0	25.5	338.5	1 099.2	818.0	1 916.8	87.4	17.5	803.9
New Mexico	E3	125	16	1.1	20.9	.8	1.5	13.8	40.7	30.3	70.3	3.0	1.0	30.4
New York	E1	2 053	322	30.7	905.4	21.4	44.8	564.5	1 876.8	1 291.4	3 168.5	107.0	33.5	1 716.0
North Carolina	E1	679	92	9.0	213.5	6.3	12.5	136.9	492.7	378.0	869.3	33.2	6.9	277.7
North Dakota	E1	44	12	.7	13.5	.5	.9	8.0	25.2	17.1	42.5	(D)	.6	19.4
Ohio	E1	1 229	222	21.9	579.3	16.0	32.9	366.1	1 156.9	825.6	1 984.9	76.0	19.1	867.2
Oklahoma	E1	302	28	3.4	77.1	2.6	5.1	52.8	186.6	168.6	354.1	8.1	2.8	117.9
Oregon	E1	420	53	5.3	151.4	3.9	7.9	97.6	334.2	300.9	634.3	19.1	4.0	185.9
Pennsylvania	E1	1 222	233	24.3	670.8	17.2	35.1	425.2	1 390.8	1 013.5	2 400.4	81.4	21.9	1 011.9
Rhode Island	E2	125	19	1.6	49.7	1.2	2.4	29.7	91.5	61.1	152.2	3.4	2.0	81.4
South Carolina	E2	304	33	3.2	66.6	2.3	4.5	40.6	131.1	85.7	217.3	9.2	3.0	90.9
South Dakota	E2	77	10	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.6	17.0
Tennessee	E1	547	82	9.6	246.3	7.1	15.0	157.4	488.4	373.0	861.7	25.2	7.5	312.8
Texas	E2	1 935	212	20.8	523.4	14.9	30.9	326.1	1 050.4	848.5	1 903.1	55.1	19.9	828.7
Utah	E1	169	32	2.3	53.0	1.7	3.6	33.9	109.1	60.4	167.9	4.7	1.9	77.0
Vermont	E1	74	19	1.7	44.4	1.3	2.7	29.0	87.0	58.7	146.0	4.3	1.7	69.4
Virginia	E1	637	95	11.1	302.1	8.0	16.0	200.1	561.0	449.6	1 012.6	30.3	11.3	464.0
Washington	E1	599	71	6.4	168.0	4.5	9.3	104.0	361.6	219.6	579.9	20.1	5.1	212.6
West Virginia	E1	94	10	1.0	23.7	.7	1.5	16.3	40.5	31.3	72.0	2.8	G	(D)
Wisconsin	E1	678	142	19.9	516.0	15.2	30.8	370.7	1 112.5	706.1	1 812.5	149.6	13.3	620.3
Wyoming	E1	47	8	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	8.8
INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE														
United States	E1	431	90	21.5	726.2	17.9	38.8	561.9	1 690.9	1 860.9	3 560.5	170.4	23.8	1 534.2
Arizona	E6	4	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California	E6	54	4	.7	24.4	.6	1.2	20.0	95.7	46.5	142.2	6.2	.8	98.0
Connecticut	E1	8	4	.3	8.0	.2	.4	5.4	10.6	10.3	21.0	1.0	(NA)	(NA)
Florida	E3	21	2	.1	2.3	.1	.2	1.6	4.5	3.8	8.4	.4	.3	12.0
Georgia	E1	18	4	.9	32.5	.7	1.6	21.0	100.8	72.8	170.7	16.5	F	(D)
Illinois	E1	25	9	3.6	122.5	3.1	6.4	96.1	271.0	230.3	504.8	23.2	4.6	274.1
Indiana	E1	10	3	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Iowa	E1	6	1	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Kentucky	E1	5	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Maine	E1	2	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Maryland	E1	15	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.2	E	(D)
Michigan	E1	14	1	.2	3.9	.1	.2	2.8	7.8	15.7	23.7	.5	(NA)	(NA)
Mississippi	E1	3	1	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Missouri	E1	7	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Nevada	E1	7	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
New Jersey	E4	24	5	.4	12.8	.4	.6	9.2	30.7	13.6	44.6	.6	.2	11.1
New York	E1	36	4	.5	14.7	.3	.7	9.3	36.3	36.2	74.7	2.1	G	(D)
North Carolina	E1	16	5	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	6.7	.9	56.9
Ohio	E1	15	5	.5	16.7	.4	.8	11.5	33.5	38.5	71.9	1.2	F	(D)
Oklahoma	E1	1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Pennsylvania	E1	13	8	1.6	63.0	1.4	3.1	47.7	140.6	143.5	285.8	11.7	2.0	139.4
Rhode Island	E1	6	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
South Carolina	E1	3	1	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Tennessee	E1	15	6	2.2	76.7	1.9	3.9	61.5	185.6	273.2	458.1	18.2	2.1	140.2
Texas	E1	19	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Virginia	E1	15	6	1.6	53.5	1.3	2.5	42.5	133.1	174.8	308.9	10.3	1.6	109.8
Wisconsin	E4	9	2	.1	2.9	.1	.2	2.2	6.5	6.2	12.7	.4	(NA)	(D)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1992 and 1987—Con.

[Excludes data for auxiliaries. States with 100 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1992											1987		
	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ² (1,000)	Value added by manufacture (million dollars)	
	E ¹	Total (no.)	With 20 employees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)							Wages (million dollars)
INDUSTRY 2759, COMMERCIAL PRINTING, N.E.C.														
United States	E1	8 690	1 255	107.3	2 596.9	73.9	154.4	1 461.7	5 441.6	3 790.9	9 290.2	344.5	125.8	5 252.9
Alabama	E1	101	9	1.2	25.5	.8	1.7	14.8	44.0	51.4	96.3	2.7	1.2	34.7
Arizona	E2	110	11	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	48.2
Arkansas	E2	63	10	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
California	E2	1 130	157	11.1	262.7	7.7	16.2	148.8	535.6	316.2	851.3	23.6	12.8	493.4
Colorado	E2	161	20	1.2	25.9	.9	1.7	14.4	48.4	35.5	84.2	2.2	G	(D)
Connecticut	E1	132	23	2.1	60.9	1.4	3.1	36.5	145.9	78.8	225.3	6.4	(NA)	(D)
Delaware	E1	14	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E
District of Columbia	E1	25	3	.3	7.2	.2	.4	3.2	12.9	6.9	19.9	.5	.6	30.6
Florida	E2	439	41	3.6	74.2	2.4	5.0	41.3	150.1	106.6	255.7	6.5	4.9	165.8
Georgia	E1	244	29	2.4	59.5	1.7	3.4	32.9	124.2	106.5	239.6	10.6	(NA)	(D)
Hawaii	E1	27	4	.2	4.4	.2	.3	2.6	9.1	6.1	15.2	.5	(NA)	(NA)
Idaho	E4	22	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Illinois	E1	519	98	7.6	202.8	5.4	11.4	118.7	410.8	250.8	660.4	20.8	9.1	421.1
Indiana	E2	172	31	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Iowa	E1	84	15	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Kansas	E1	76	21	1.9	44.4	1.3	2.7	24.1	100.3	66.1	166.3	4.0	G	(D)
Kentucky	E1	104	18	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Louisiana	E2	96	8	.7	14.3	.5	1.1	8.7	27.8	31.1	59.4	(D)	F	(D)
Maine	E3	39	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Maryland	E2	138	26	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	3.8	G	(D)
Massachusetts	E1	231	45	H	(D)	(D)	(D)	(D)	(D)	(D)	(D)	11.0	(NA)	(D)
Michigan	E1	312	41	3.5	87.3	2.3	4.7	45.1	179.3	153.9	335.5	13.9	(NA)	(D)
Minnesota	E1	175	44	H	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Mississippi	E2	47	5	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Missouri	E2	211	34	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Nebraska	E2	58	10	1.4	34.9	1.0	2.1	21.1	73.7	77.6	151.6	5.1	G	(D)
Nevada	E1	41	7	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
New Hampshire	E1	44	9	.6	14.3	.4	.8	7.6	34.9	22.5	57.4	2.6	.6	19.5
New Jersey	E1	384	52	4.9	135.8	3.3	7.1	74.5	273.0	179.8	453.0	18.7	7.5	344.8
New Mexico	E5	37	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
New York	E2	670	101	8.5	220.2	6.0	12.8	128.1	457.8	305.1	763.5	28.1	(NA)	(D)
North Carolina	E2	218	25	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	8.6	2.4	87.6
North Dakota	E3	24	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2	(NA)	(D)
Ohio	E1	450	77	8.6	223.3	5.5	11.5	103.3	512.3	368.2	875.5	29.5	(NA)	(D)
Oklahoma	E2	107	8	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Oregon	E1	106	10	.8	19.2	.6	1.2	11.2	40.4	31.4	71.8	2.7	.9	33.4
Pennsylvania	E2	378	60	6.1	143.0	4.1	8.4	82.5	306.6	220.1	525.7	12.3	6.5	243.1
Rhode Island	E4	56	6	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
South Carolina	E1	88	11	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
South Dakota	E1	13	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	13.7
Tennessee	E1	152	25	2.0	51.5	1.5	3.0	29.3	107.0	85.9	190.0	5.3	2.1	78.7
Texas	E2	543	67	I	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Utah	E2	55	6	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Vermont	E1	29	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Virginia	E2	168	7	.9	20.1	.6	1.3	11.1	41.2	34.5	76.1	2.1	1.4	52.2
Washington	E1	140	20	1.6	39.9	1.1	2.2	21.0	85.0	49.9	133.8	3.5	2.1	81.2
West Virginia	E2	27	1	.1	2.0	.1	.2	1.2	5.5	3.6	8.8	.2	(NA)	(D)
Wisconsin	E1	190	45	5.3	142.8	3.8	7.9	85.8	347.7	205.4	553.7	41.0	(NA)	(D)
INDUSTRY 2761, MANIFOLD BUSINESS FORMS														
United States	E1	922	540	47.9	1 343.2	33.6	69.3	873.0	3 924.7	3 499.9	7 435.9	160.7	53.3	3 894.1
Alabama	E1	9	3	.2	5.9	.2	.3	3.4	19.3	11.4	30.4	.3	.4	26.0
Arizona	E2	20	11	.7	18.4	.5	1.1	11.9	55.4	35.0	92.6	1.2	.4	31.8
Arkansas	E1	7	4	.6	19.6	.5	1.0	15.6	59.4	32.4	91.8	1.9	.7	66.8
California	E2	101	57	4.3	128.2	2.9	6.1	82.1	323.4	316.0	639.7	12.1	5.3	389.2
Colorado	E1	9	4	.4	12.0	.3	.6	7.4	22.4	28.7	51.3	1.2	.5	25.3
Connecticut	E1	13	8	.6	16.6	.3	.7	8.9	36.2	38.4	74.3	.9	.8	52.8
Florida	E4	37	16	1.2	33.9	.7	1.4	16.9	73.4	94.1	170.2	5.5	1.2	62.8
Georgia	E2	36	19	1.4	35.4	1.0	2.1	24.5	109.3	90.5	200.4	3.5	1.4	98.5
Idaho	E1	1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Illinois	E2	57	34	3.1	93.2	2.2	4.9	61.1	240.7	279.5	519.2	15.6	4.0	268.1
Indiana	E1	18	12	1.5	45.7	1.1	2.5	30.8	142.4	165.6	310.9	4.3	1.1	97.6
Iowa	E1	17	15	1.4	36.2	.9	1.8	23.1	133.0	108.7	240.4	5.9	1.4	121.7
Kansas	E1	18	14	1.7	43.5	1.2	2.5	28.2	98.0	77.8	173.5	6.5	G	(D)
Kentucky	E1	8	6	.7	15.2	.5	.9	11.1	54.5	51.1	105.1	(D)	.5	37.8
Louisiana	E7	12	5	.3	6.5	.2	.4	3.9	17.3	19.6	37.0	.7	.4	17.6
Maryland	E1	9	8	.7	18.7	.5	1.2	13.6	81.0	61.0	142.2	2.7	1.3	120.2
Massachusetts	E1	15	9	.8	21.3	.5	1.1	14.4	85.4	38.6	122.8	2.7	F	(D)
Michigan	E1	33	18	1.5	47.4	.9	1.8	24.6	106.4	98.2	204.3	3.3	1.8	102.7
Minnesota	E1	19	13	1.2	37.8	.8	1.5	21.1	87.9	67.9	154.2	2.1	G	(D)
Mississippi	E1	7	4	.2	5.1	.1	.2	2.3	11.3	8.6	19.9	.4	(NA)	(NA)
Missouri	E1	27	14	1.4	36.7	1.0	2.2	24.6	175.0	114.7	289.3	2.4	1.3	119.7
Nebraska	E1	6	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Nevada	E1	8	4	.2	3.6	.1	.2	2.8	12.4	13.5	25.8	.5	(NA)	(NA)
New Hampshire	E1	6	3	.7	21.1	.5	1.1	15.2	58.3	32.4	90.7	(D)	F	(D)
New Jersey	E6	29	13	1.2	38.3	.8	1.6	23.0	98.2	103.7	201.8	2.5	1.6	97.9
New Mexico	E1	2	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New York	E1	48	26	2.1	65.0	1.4	3.1	41.0	122.0	86.2	208.9	3.8	(NA)	(D)
North Carolina	E2	31	16	1.2	28.8	.9	1.8	20.0	73.4	67.0	139.9	4.2	G	(D)
Ohio	E1	36	22	2.7	75.4	1.9	4.0	50.5	210.1	128.7	337.9	7.5	3.6	248.3
Oklahoma	E1	8	3	.7	18.8	.5	1.0	11.6	53.8	59.6	115.1	1.5	.8	47.5

See footnotes at end of table.

27B-10 COMMERCIAL PRINT. & MANIFOLD BUS. FORMS

MANUFACTURES—INDUSTRY SERIES

Table 2. Industry Statistics for Selected States: 1992 and 1987—Con.

[Excludes data for auxiliaries. States with 100 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1992											1987		
	E ¹	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employ-ees ² (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employ-ees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 2761, MANIFOLD BUSINESS FORMS—Con.														
Oregon	—	19	14	1.0	30.3	.7	1.5	20.5	70.7	74.0	145.6	1.5	1.0	77.1
Pennsylvania	E2	64	42	4.5	122.1	3.2	6.5	82.8	402.3	444.9	847.1	16.9	4.2	426.6
Rhode Island	E4	5	3	.2	6.3	.1	.3	3.8	14.0	12.8	26.7	(D)	.2	10.8
South Carolina	—	8	5	.6	17.0	.4	.9	9.9	55.8	54.1	111.1	2.8	.7	42.1
Tennessee	—	25	15	1.1	28.9	.8	1.5	18.6	89.3	66.5	157.2	12.5	.9	56.9
Texas	—	76	42	3.4	90.7	2.4	5.0	58.5	259.0	262.4	526.6	14.1	4.0	256.4
Utah	—	9	8	.7	19.2	.5	1.0	14.8	82.4	36.1	119.3	1.4	.7	70.7
Vermont	—	4	3	.5	14.9	.4	.7	11.9	62.5	53.5	115.9	2.8	.6	71.4
Virginia	E1	17	10	.9	18.5	.6	1.2	11.6	76.9	58.1	135.0	3.1	1.2	122.9
Washington	E2	15	8	.4	10.9	.3	.5	7.4	20.5	18.9	39.6	.9	.5	24.4
West Virginia	—	3	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.4	40.0
Wisconsin	E1	24	16	1.0	27.1	.7	1.5	18.4	128.7	96.4	225.2	1.5	1.6	140.8

Note: For qualifications of data, see footnotes on table 1a.

¹Payroll and sales data for some small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other Government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown for those States where estimated value of shipments data based on administrative-record data account for 10 percent or more of figure shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Statistics for some producing States have been withheld to avoid disclosing data for individual companies. However, for States with 100 employees or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: C—100 to 249 employees; E—250 to 499 employees; F—500 to 999 employees; G—1,000 to 2,499 employees; H—2,500 to 4,999 employees; I—5,000 to 9,999 employees; J—10,000 to 24,999 employees; K—25,000 to 49,999 employees; L—50,000 to 99,999 employees; M—100,000 employees or more.

Table 3a. Summary Statistics for the Industry: 1992

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Commercial printing, lithographic (SIC 2752)	Commercial printing, gravure (SIC 2754)	Commercial printing, n.e.c. (SIC 2759)	Manifold business forms (SIC 2761)
Companies	28 489	401	8 570	644
All establishments	29 344	431	8 690	922
With 1 to 19 employees	25 093	341	7 435	382
With 20 to 99 employees	3 527	48	1 109	408
With 100 employees or more	724	42	146	132
Employment and labor costs:				
Employees	439.9	21.5	107.3	47.9
Compensation, total	14 467.2	877.3	3 214.9	1 696.3
Annual payroll	12 047.5	726.2	2 596.9	1 343.2
Fringe benefits	2 419.6	151.1	618.0	353.1
Social Security and other legally required payments	1 101.7	65.4	244.3	150.6
Employer voluntary payments	1 317.9	85.6	373.7	202.5
Production workers:				
Average for year	317.4	17.9	73.9	33.6
March	317.3	17.7	74.3	33.9
May	317.8	18.1	74.2	33.8
August	318.5	18.0	74.3	33.6
November	316.7	17.9	73.1	33.3
Hours	653.0	38.8	154.4	69.3
Wages	7 679.0	561.9	1 461.7	873.0
Cost of materials ¹	18 723.1	1 860.9	3 790.9	3 499.9
Materials, parts, containers, etc., consumed ²	15 389.0	1 727.7	3 279.5	3 110.2
Resales	558.8	14.5	233.1	294.8
Fuels	140.7	21.9	26.3	9.6
Purchased electricity	461.4	50.4	77.1	54.1
Contract work	2 173.2	46.4	174.9	31.2
Quantity of electric energy used for heat and power:				
Purchased	7 121.1	918.6	1 154.0	913.1
Generated less sold	—	—	—	—
Total value of shipments	43 588.2	3 560.5	9 290.2	7 435.9
Value added	24 842.5	1 690.9	5 441.6	3 924.7
Inventories by stage of fabrication:				
Beginning of 1992	2 788.1	275.4	823.4	796.2
Finished goods	326.7	27.6	246.2	357.8
Work in process	930.6	109.1	240.1	74.2
Materials and supplies	1 530.8	138.7	337.2	364.2
End of 1992	2 724.8	274.0	828.7	753.0
Finished goods	332.0	29.6	244.7	348.9
Work in process	902.8	98.5	183.9	71.7
Materials and supplies	1 490.0	145.9	400.1	332.4

Note: For qualifications of data, see footnotes on table 1a.

¹Data on purchased services for the repair of buildings and machinery and for communication services are not included in cost of materials, etc., but are shown in table 3c.

²Data on materials consumed by type are shown in table 7. Data on amount purchased or transferred from foreign sources are shown in table 3c.

Table 3b. Gross Book Value of Depreciable Assets, Capital Expenditures, Retirements, Depreciation, and Rental Payments: 1992

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Commercial printing, lithographic (SIC 2752)	Commercial printing, gravure (SIC 2754)	Commercial printing, n.e.c. (SIC 2759)	Manifold business forms (SIC 2761)
Gross book value of depreciable assets:				
Total:				
Beginning of year	16 842.2	2 608.1	2 711.8	2 642.5
New capital expenditures ¹	1 629.4	170.4	344.5	160.7
Used capital expenditures	264.8	7.7	47.1	33.3
Retirements	519.1	39.8	67.8	69.2
End of year	18 217.4	2 746.5	3 035.6	2 767.2
Buildings and other structures:				
Beginning of year	2 335.8	413.8	523.1	484.3
New capital expenditures	166.6	18.6	74.3	11.9
Used capital expenditures	32.7	.1	9.7	5.0
Retirements	27.6	2.0	3.6	6.0
End of year	2 507.4	430.5	603.6	495.3
Machinery and equipment:				
Beginning of year	14 506.5	2 194.3	2 188.7	2 158.2
New capital expenditures ¹	1 462.8	151.8	270.1	148.8
Used capital expenditures	232.1	7.6	37.4	28.3
Retirements	491.5	37.7	64.2	63.3
End of year	15 709.9	2 316.0	2 432.0	2 272.0
Depreciation charges during 1992:				
Total	1 279.8	161.9	210.3	180.7
Buildings and other structures	100.3	17.6	17.6	22.3
Machinery and equipment	1 179.5	144.3	187.1	158.4
Rental payments:				
Total	894.6	20.9	187.5	70.9
Buildings and other structures	470.7	10.4	108.3	46.4
Machinery and equipment	423.9	10.6	79.2	24.6

¹Data on new machinery and equipment expenditures by type are provided in table 3c.

Table 3c. Supplemental Industry Statistics Based on Sample Estimates: 1992

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Commercial printing, lithographic (SIC 2752)		Commercial printing, gravure (SIC 2754)		Commercial printing, n.e.c. (SIC 2759)		Manifold business forms (SIC 2761)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Purchased services:								
Cost of purchased services for the repair of--								
Buildings and other structures	59.9	(X)	8.2	(X)	12.2	(X)	8.8	(X)
Response coverage ratio (percent) ²	66.4	(X)	89.7	(X)	61.7	(X)	80.0	(X)
Machinery	344.4	(X)	64.3	(X)	47.6	(X)	41.6	(X)
Response coverage ratio (percent) ²	71.1	(X)	91.9	(X)	64.8	(X)	81.7	(X)
Other purchased services:								
Communications	106.5	(X)	3.7	(X)	26.0	(X)	22.9	(X)
Response coverage ratio (percent) ²	66.7	(X)	91.7	(X)	58.7	(X)	80.4	(X)
Legal	51.7	(X)	1.3	(X)	10.2	(X)	4.5	(X)
Response coverage ratio (percent) ²	68.3	(X)	85.1	(X)	63.8	(X)	80.1	(X)
Accounting and bookkeeping	54.8	(X)	.8	(X)	14.3	(X)	4.6	(X)
Response coverage ratio (percent) ²	67.3	(X)	85.3	(X)	62.3	(X)	81.5	(X)
Advertising	94.6	(X)	.5	(X)	39.3	(X)	17.5	(X)
Response coverage ratio (percent) ²	68.1	(X)	84.1	(X)	64.0	(X)	80.7	(X)
Software and other data processing	28.7	(X)	1.0	(X)	9.1	(X)	5.6	(X)
Response coverage ratio (percent) ²	66.3	(X)	80.6	(X)	61.6	(X)	80.0	(X)
Refuse removal, including hazardous waste	33.9	(X)	3.3	(X)	8.8	(X)	6.3	(X)
Response coverage ratio (percent) ²	69.7	(X)	85.3	(X)	64.3	(X)	82.9	(X)
New machinery and equipment expenditures								
Automobiles, trucks, etc., for highway use	1 462.8	(X)	151.8	(X)	270.1	(X)	148.8	(X)
Computers and peripheral data processing equipment	36.0	10	.2	85	11.1	23	.7	21
All other	132.9	8	4.5	5	34.1	13	8.6	23
Adjustment ratio ³	1 293.9	1	147.0	1	225.0	3	139.4	2
Response coverage ratio (percent) ²	1.4	(X)	1.2	(X)	1.8	(X)	1.2	(X)
Cost of materials, components, parts, etc., used								
Materials purchased or transferred from foreign sources ⁴	15 389.0	(X)	1 727.7	(X)	3 279.5	(X)	3 110.2	(X)
Materials purchased or transferred from domestic sources	352.1	6	(S)	(X)	78.3	37	16.1	19
Adjustment ratio ³	15 037.0	1	(S)	(X)	3 201.2	1	3 094.1	1
Response coverage ratio (percent) ²	2.0	(X)	(S)	(X)	2.0	(X)	1.8	(X)

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies. Amounts purchased by separate central administrative offices and services provided to establishments by central administrative offices are excluded.

¹For description of relative standard error of estimate, see Qualifications of the Data in appendixes.

²A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight, see appendix B) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in the industry.

³Detail has been adjusted upwards to account for nonresponse. Inverse of the ratio shown represents a measure of the response of the inquiry. (See appendixes for further explanation.)

⁴Data may understate the true cost of imported parts, components, and supplies since some respondents do not know the origin of these materials. Includes cases where materials were purchased from secondary suppliers or where they were transferred from company-operated warehouses or other distribution points. Direct purchases from foreign suppliers and importers by domestic manufacturing establishments are believed to be reported accurately.

Table 4. Industry Statistics by Employment Size of Establishment: 1992

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and employment size class	E ¹	All establishments (no.)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC												
Total	E1	29 344	439.9	12 047.5	317.4	653.0	7 679.0	24 842.5	18 723.1	43 588.2	1 629.4	2 724.8
Establishments with an average of—												
1 to 4 employees	E7	13 672	25.9	496.4	18.6	40.5	338.5	1 097.1	894.0	1 989.8	70.0	125.9
5 to 9 employees	E2	7 404	47.9	932.0	35.3	70.8	649.3	1 897.8	1 300.8	3 197.0	88.5	187.4
10 to 19 employees	E1	4 017	53.7	1 251.4	37.0	75.4	797.6	2 408.0	1 582.1	3 991.6	117.3	215.0
20 to 49 employees	E1	2 605	78.9	2 164.3	54.3	111.0	1 272.4	4 164.0	2 704.0	6 872.4	253.9	411.9
50 to 99 employees	E1	922	63.7	1 986.8	44.6	93.6	1 174.4	3 861.8	2 732.8	6 587.7	276.1	412.6
100 to 249 employees	E1	525	79.2	2 484.7	57.2	117.0	1 553.4	5 353.1	4 467.6	9 819.7	343.6	596.2
250 to 499 employees	E1	149	50.9	1 582.0	39.4	82.0	1 066.5	3 536.4	3 105.8	6 673.6	238.2	466.8
500 to 999 employees	—	42	28.4	839.6	22.1	44.1	599.6	1 783.9	1 448.0	3 233.4	148.2	238.6
1,000 to 2,499 employees	—	8	11.4	310.3	8.9	18.5	227.2	740.4	488.0	1 223.0	93.6	70.3
Covered by administrative records ²	E9	12 920	30.9	464.4	22.6	46.5	306.9	986.1	862.1	1 848.2	73.6	120.1
INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE												
Total	—	431	21.5	726.2	17.9	38.8	561.9	1 690.9	1 860.9	3 560.5	170.4	274.0
Establishments with an average of—												
1 to 4 employees	E7	219	.4	9.7	.3	.6	7.6	15.0	25.1	40.3	1.6	2.6
5 to 9 employees	E8	79	.5	10.3	.4	.9	7.7	19.1	20.0	39.1	1.9	3.1
10 to 19 employees	E3	43	.6	13.7	.4	1.0	9.3	30.0	28.2	58.0	1.8	4.5
20 to 49 employees	E1	28	.9	25.2	.6	1.4	16.9	45.2	50.5	95.9	3.2	7.6
50 to 99 employees	E2	20	1.4	43.5	1.1	2.2	29.5	99.0	117.6	214.7	8.8	30.1
100 to 249 employees	E1	17	2.9	103.8	2.3	5.2	74.1	281.9	292.6	574.9	18.4	43.3
250 to 499 employees	—	13	14.8	519.9	12.7	27.6	417.0	1 200.6	1 326.9	2 537.5	55.8	182.7
500 to 999 employees	—	9	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
1,000 to 2,499 employees	—	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	276	.9	16.3	.7	1.4	12.0	31.8	33.5	65.2	3.2	5.2
INDUSTRY 2759, COMMERCIAL PRINTING, N.E.C.												
Total	E1	8 690	107.3	2 596.9	73.9	154.4	1 461.7	5 441.6	3 790.9	9 290.2	344.5	828.7
Establishments with an average of—												
1 to 4 employees	E8	4 537	8.8	157.7	6.2	12.3	94.2	361.7	258.7	620.1	24.5	56.2
5 to 9 employees	E3	1 895	12.3	223.7	8.8	17.8	137.8	463.9	308.5	772.2	24.0	62.0
10 to 19 employees	E1	1 003	13.5	300.3	9.4	20.0	177.4	598.9	391.7	988.1	37.4	76.7
20 to 49 employees	E1	823	24.3	607.1	16.4	34.8	328.6	1 243.1	861.4	2 106.6	68.7	169.0
50 to 99 employees	E1	286	19.7	520.4	13.7	29.4	292.2	1 041.8	794.5	1 889.2	67.9	173.8
100 to 249 employees	E1	120	18.2	487.4	12.5	25.9	263.3	1 060.0	766.7	1 827.8	64.2	175.8
250 to 499 employees	E1	23	8.0	224.8	5.6	11.4	139.2	434.8	316.1	760.9	46.3	68.4
500 to 999 employees	—	2	2.6	75.6	1.4	2.8	29.0	237.5	93.4	325.3	11.4	46.7
1,000 to 2,499 employees	—	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	4 747	12.1	174.2	8.6	16.2	101.2	397.0	289.6	686.6	26.4	64.1
INDUSTRY 2761, MANIFOLD BUSINESS FORMS												
Total	E1	922	47.9	1 343.2	33.6	69.3	873.0	3 924.7	3 499.9	7 435.9	160.7	753.0
Establishments with an average of—												
1 to 4 employees	E6	135	.3	6.9	.2	.4	4.2	20.7	17.8	39.5	.8	3.9
5 to 9 employees	E5	101	.7	17.1	.5	1.0	9.6	42.8	36.3	78.7	1.4	8.9
10 to 19 employees	E4	146	2.1	47.7	1.4	2.9	28.9	127.6	121.8	248.2	5.3	28.3
20 to 49 employees	E1	228	7.6	202.8	5.2	10.9	126.9	463.4	470.2	938.2	15.8	102.4
50 to 99 employees	E1	180	13.1	379.1	9.0	18.4	233.1	998.5	1 040.6	2 038.6	52.7	202.2
100 to 249 employees	E1	107	15.9	455.9	11.6	24.1	314.6	1 525.8	1 384.4	2 917.9	59.8	293.3
250 to 499 employees	E1	24	8.2	233.7	5.8	11.5	155.6	745.9	428.8	1 174.8	24.9	114.0
500 to 999 employees	—	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	168	.8	15.1	.6	1.2	9.9	37.4	33.7	71.1	1.7	7.7

Note: For qualifications of data, see footnotes on table 1a. Data shown as (D) are included in underscored figures above.

¹Payroll and sales data for some small single-establishment manufacturing companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other Government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown for those employment-size classes where estimated data based on administrative-record data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Report forms were not mailed to small single-establishment companies with up to 20 employees (cutoff varied by industry). Payroll and sales data for 1992 were obtained from administrative records supplied by other agencies of the Federal Government. Those data were then used in conjunction with industry averages to estimate the items shown. Data are also included in respective employment-size classes shown.

Table 5a. Industry Statistics by Industry and Primary Product Class Specialization: 1992

[Table presents selected statistics for establishments according to their degree of specialization in products primary to their industry. Measures of plant specialization shown are (1) industry specialization: ratio of primary product shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment; and (2) product class specialization: ratio of largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment. See appendix for method of computing ratios. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry or product class code	Industry or primary product class	All establishments (number)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)				
2752	Commercial printing, lithographic:										
	All establishments in industry -----	29 344	439.9	12 047.5	317.4	653.0	7 679.0	24 842.5	18 723.1	43 588.2	1 629.4
	Establishments with this product class primary:										
	Magazine and periodical printing (lithographic) -----	495	43.7	1 257.3	34.6	70.2	916.5	2 612.6	1 795.2	4 408.5	222.4
27521	Label and wrapper printing (lithographic) -----	279	12.7	400.0	9.2	19.2	248.9	874.2	633.4	1 509.1	57.0
27523	Catalog and directory printing (lithographic) -----	331	23.4	751.7	18.2	37.7	527.8	1 641.9	1 773.6	3 418.8	136.0
27524	Financial and legal printing (lithographic), excluding checkbooks -----	206	10.3	347.5	7.0	14.3	187.0	773.2	355.3	1 122.9	31.5
27525	Advertising printing (lithographic) -----	2 842	128.6	4 149.2	90.7	190.1	2 514.8	8 343.3	6 690.2	15 045.9	587.7
27526	Other general job printing (lithographic) -----	7 623	115.4	2 761.1	81.3	164.2	1 768.0	5 794.1	3 770.8	9 584.2	298.3
2754	Commercial printing, gravure:										
	All establishments in industry -----	431	21.5	726.2	17.9	38.8	561.9	1 690.9	1 860.9	3 560.5	170.4
	Establishments with this product class primary:										
	Magazine and periodical printing (gravure) -----	7	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	22.6
27541	Label and wrapper printing (gravure) -----	26	2.8	92.1	2.2	4.7	67.0	203.4	264.1	465.7	17.1
27543	Catalog and directory printing (gravure) -----	9	6.6	224.1	5.6	12.7	178.0	502.1	471.6	981.6	78.8
27545	Advertising printing (gravure) -----	21	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
27546	Other commercial printing (gravure) -----	26	2.2	71.4	1.7	3.5	48.0	207.5	152.9	359.2	14.9
2759	Commercial printing, n.e.c.:										
	All establishments in industry -----	8 690	107.3	2 596.9	73.9	154.4	1 461.7	5 441.6	3 790.9	9 290.2	344.5
	Establishments with this product class primary:										
	Magazine and periodical printing (letterpress) -----	36	.7	18.6	.5	1.2	12.0	37.2	18.6	55.8	.7
27591	Label and wrapper printing (letterpress) -----	63	1.7	46.4	1.2	2.5	26.2	100.6	79.1	180.4	9.3
27593	Catalog and directory printing (letterpress) -----	18	.6	23.1	.4	.9	16.5	31.4	37.8	69.2	(D)
27594	Financial and legal printing (letterpress) -----	27	.4	10.9	.2	.5	5.5	18.1	12.6	30.6	1.4
27595	Advertising printing (letterpress) -----	129	2.8	88.2	1.9	4.1	52.6	157.9	123.1	281.1	4.7
27596	Other general job printing (letterpress) -----	519	9.6	222.1	6.7	14.1	134.0	423.6	261.0	740.9	19.8
27598	Screen printing, except on textiles -----	886	26.9	641.7	19.1	40.7	362.9	1 250.8	707.7	1 953.0	56.0
27599	Engraving -----	144	3.6	93.2	2.7	5.5	62.1	173.4	82.4	255.9	4.4
2759A	Nonimpact printing, using laser and ink-jet equipment -----	77	1.8	45.8	1.1	2.2	22.8	82.7	54.5	138.0	5.5
2759B	Label and wrapper printing (flexographic) -----	452	17.1	494.6	10.7	23.2	247.1	1 183.1	1 031.9	2 211.2	98.2
2759C	Flexographic printing, not elsewhere classified (excluding labels and wrappers) -----	64	1.9	60.4	1.4	2.8	39.1	155.7	103.6	260.0	26.0
2761	Manifold business forms:										
	All establishments in industry -----	922	47.9	1 343.2	33.6	69.3	873.0	3 924.7	3 499.9	7 435.9	160.7
	Establishments with this product class primary:										
	Unit set forms, loose or bound -----	127	9.2	259.9	6.4	13.0	162.3	748.5	493.4	1 247.3	29.0
27612	Manifold books and pegboard accounting systems -----	24	2.6	68.5	1.9	3.9	44.2	325.4	104.4	421.2	6.4
27615	Custom continuous forms -----	307	23.4	673.9	16.8	34.6	457.4	1 774.8	1 405.6	3 186.8	88.3
27617	Stock continuous forms -----	87	5.9	173.9	3.9	8.3	103.6	611.7	1 088.6	1 709.3	17.4

Note: For qualifications of data, see footnotes on table 1a.

Table 5b. Industry-Product Analysis—Value of Industry and Primary Product Shipments; Specialization and Coverage Ratios: 1992 and Earlier Census Years

[Million dollars. An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work (total miscellaneous receipts). Subtotals for total value of shipments show this product pattern for an industry. Primary products specialization ratio is the primary products value of shipments divided by the sum of primary products value of shipments plus secondary products value of shipments. The extent of which an industry's primary products are shipped by establishments classified both in and out of an industry is the coverage ratio and is calculated by dividing the primary products value of shipments by the value of primary products shipments made in all industries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry	1992	1987	1982
INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC			
Total value of shipments -----	43 588.2	32 832.0	19 441.6
Primary products value of shipments -----	39 779.0	30 130.3	17 379.6
Secondary products value of shipments -----	2 370.5	1 849.7	1 619.9
Total miscellaneous receipts -----	1 438.7	852.0	442.1
Value of resales -----	783.8	527.6	244.5
Contract receipts -----	1	5.7	6.5
Other miscellaneous receipts -----	654.9	318.7	191.1
Receipts for photocopying and duplicating -----	322.4	(NA)	(NA)
Sales of scrap and refuse -----	41.2	(NA)	13.3
Receipts for services as print broker -----	101.2	(NA)	(NA)
Other miscellaneous receipts -----	1163.8	(NA)	148.7
Other miscellaneous receipts, n.s.k. -----	26.4	(NA)	29.2
Primary products specialization ratio -----	94	94	91
Value of primary products shipments made in all industries -----	42 424.2	32 143.1	18 777.9
Value of primary products shipments made in this industry -----	39 779.0	30 130.3	17 379.6
Value of primary products shipments made in other industries -----	2 645.2	2 012.8	1 398.4
Coverage ratio -----	94	94	93

Table 5b. Industry–Product Analysis—Value of Industry and Primary Product Shipments; Specialization and Coverage Ratios: 1992 and Earlier Census Years—Con.

[Million dollars. An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work (total miscellaneous receipts). Subtotals for total value of shipments show this product pattern for an industry. Primary products specialization ratio is the primary products value of shipments divided by the sum of primary products value of shipments plus secondary products value of shipments. The extent of which an industry's primary products are shipped by establishments classified both in and out of an industry is the coverage ratio and is calculated by dividing the primary products value of shipments by the value of primary products shipments made in all industries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry	1992	1987	1982
INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE			
Total value of shipments	3 560.5	3 059.8	(NA)
Primary products value of shipments	3 072.1	2 582.0	(NA)
Secondary products value of shipments	445.5	458.8	(NA)
Total miscellaneous receipts	43.0	18.9	(NA)
Value of resales	16.3	7.6	(NA)
Contract receipts	1_	(Z)	(NA)
Other miscellaneous receipts	26.7	11.3	(NA)
Receipts for photocopying and duplicating	(D)	(NA)	(NA)
Sales of scrap and refuse	(D)	(NA)	(NA)
Receipts for services as print broker.....	(D)	(NA)	(NA)
Other miscellaneous receipts	¹ (D)	(NA)	(NA)
Other miscellaneous receipts, n.s.k.	(D)	(NA)	(NA)
Primary products specialization ratio	87	85	(NA)
Value of primary products shipments made in all industries	3 433.2	2 740.2	(NA)
Value of primary products shipments made in this industry	3 072.1	2 582.0	(NA)
Value of primary products shipments made in other industries.....	361.2	158.2	(NA)
Coverage ratio	89	94	(NA)
INDUSTRY 2759, COMMERCIAL PRINTING, N.E.C.			
Total value of shipments	9 290.2	8 894.3	(NA)
Primary products value of shipments	8 177.3	7 916.2	(NA)
Secondary products value of shipments	653.5	639.5	(NA)
Total miscellaneous receipts	459.3	338.6	(NA)
Value of resales	363.2	268.5	(NA)
Contract receipts	1_	2.9	(NA)
Other miscellaneous receipts	96.1	67.2	(NA)
Receipts for photocopying and duplicating	16.7	(NA)	(NA)
Sales of scrap and refuse9	(NA)	(NA)
Receipts for services as print broker.....	8.9	(NA)	(NA)
Other miscellaneous receipts	¹ 65.1	(NA)	(NA)
Other miscellaneous receipts, n.s.k.	4.6	(NA)	(NA)
Primary products specialization ratio	93	92	(NA)
Value of primary products shipments made in all industries	9 231.5	9 112.0	(NA)
Value of primary products shipments made in this industry	8 177.3	7 916.2	(NA)
Value of primary products shipments made in other industries.....	1 054.2	1 195.8	(NA)
Coverage ratio	89	87	(NA)
INDUSTRY 2761, MANIFOLD BUSINESS FORMS			
Total value of shipments	7 435.9	7 397.1	5 058.7
Primary products value of shipments	6 499.4	6 593.0	4 645.6
Secondary products value of shipments	498.7	386.5	214.8
Total miscellaneous receipts	437.9	417.6	198.4
Value of resales	417.1	371.6	165.0
Contract receipts	1_	16.7	3.1
Other miscellaneous receipts	20.8	29.3	30.3
Sales of scrap and refuse	12.0	(NA)	13.9
Other miscellaneous receipts	17.8	(NA)	16.3
Other miscellaneous receipts, n.s.k.	1.0	(NA)	.1
Primary products specialization ratio	93	94	96
Value of primary products shipments made in all industries	6 795.3	6 787.7	4 812.2
Value of primary products shipments made in this industry	6 499.4	6 593.0	4 645.6
Value of primary products shipments made in other industries.....	296.0	194.7	166.6
Coverage ratio	96	97	97

Note: For qualifications of data, see footnotes on table 1a.

¹For 1992, contract receipts are included in "other miscellaneous receipts."

Table 6a. Product and Product Classes—Value of Shipments by All Producers: 1992 and 1987

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendixes. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	1992		1987	
		Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)	Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)
2752--	COMMERCIAL PRINTING, LITHOGRAPHIC (OFFSET)				
	Total	(NA)	42 424.2	(NA)	32 143.1
27521	Magazine and periodical printing (lithographic) ²	(NA)	4 664.3	(NA)	3 779.6
	Magazines and periodicals (excluding Sunday magazine and comic supplements):				
27521 12	Sheet-fed	662	694.1	539	613.3
27521 14	Web-fed	261	3 256.0	244	2 613.3
27521 17	Magazine and comic supplements for Sunday newspapers	20	198.5	45	173.7
27521 00	Magazine and periodical printing (lithographic), n.s.k.	(NA)	515.6	(NA)	379.4
27522	Label and wrapper printing (lithographic) ²	(NA)	1 607.1	(NA)	794.0
	Printed labels, custom and stock, including bordered:				
	Made of paper:				
27522 11	Flat (except pressure-sensitive) ³	267	605.3	200	392.4
27522 13	Rolls (except pressure-sensitive) ³	25	52.8	15	19.1
27522 17	Pressure-sensitive (self-adhesive) ³	161	205.7	81	90.7
27522 20	Made of other materials, except cloth	35	39.8	10	10.0
	Printed rolls and sheets for packaging purposes (printing only):				
27522 34	Paper (single-web)	56	178.2	30	71.3
27522 43	Other, including multiweb structures	23	195.3	10	38.3
27522 00	Label and wrapper printing (lithographic), n.s.k.	(NA)	330.0	(NA)	172.2
27523	Catalog and directory printing (lithographic) ²	(NA)	3 943.3	(NA)	2 868.7
	Catalogs (including direct mail):				
27523 12	Sheet-fed	892	692.5	627	445.1
27523 14	Web-fed	308	1 853.3	239	1 328.1
	Directories:				
27523 18	Telephone	36	846.3	41	650.4
	Other, including business reference services:				
27523 24	Sheet-fed	87	51.9	65	65.6
27523 26	Web-fed	51	135.5	52	121.9
27523 00	Catalog and directory printing (lithographic), n.s.k.	(NA)	363.8	(NA)	257.6
27524	Financial and legal printing (lithographic), excluding checkbooks ²	(NA)	1 787.4	(NA)	1 582.5
	SEC filing and prospectuses:				
27524 12	Sheet-fed	47	96.3	53	119.5
27524 14	Web-fed	22	254.7	36	274.6
	Annual reports and other corporate financial printing:				
27524 16	Sheet-fed	407	326.1	380	280.1
27524 18	Web-fed	67	164.2	70	179.0
	Other financial and legal printing, including insurance forms, briefs, etc.:				
27524 21	Sheet-fed	186	140.6	165	94.9
27524 22	Web-fed	40	69.2	31	81.8
	Bank printing, excluding bank forms and checkbooks:				
27524 24	Sheet-fed	110	119.1	97	89.3
27524 26	Web-fed	62	232.5	41	81.2
27524 27	Bank form printing, including passbooks, debit/ credit slips, ledger and statement sheets, installment-loan coupons, etc.	66	92.7	44	61.8
27524 00	Financial and legal printing (lithographic), excluding checkbooks, n.s.k.	(NA)	292.1	(NA)	320.2
27525	Advertising printing (lithographic) ²	(NA)	13 219.2	(NA)	9 688.9
	Direct mail, including circulars, letters, pamphlets, cards, etc.:				
27525 12	Sheet-fed	1 571	1 659.2	1 235	1 245.4
27525 14	Web-fed	409	1 875.8	342	1 256.1
	Display advertising:				
27525 23	Posters, including outdoor advertising, car cards, window Counter, floor display, point-of-purchase, and other printed display material:	297	224.5	145	132.7
	Sheet-fed	442	577.3	396	390.1
27525 28	Web-fed	48	117.5	40	44.6
	Preprinted newspaper inserts (advertising supplements not regularly issued):				
27525 32	Rolls, including hi-fi and spectacular	87	289.0	85	194.7
27525 33	Sections (2 pages or more)	169	1 528.8	126	1 041.0
27525 41	Shopping news	109	97.1	132	165.6
27525 45	Book jackets	58	133.7	(NA)	(⁴)
	Other advertising printing, including brochures, magazine inserts, etc.:				
27525 52	Sheet-fed	1 757	2 696.4	1517	⁴² 288.6
27525 54	Web-fed	379	1 913.2	330	⁴¹ 285.9
27525 00	Advertising printing (lithographic), n.s.k.	(NA)	2 106.7	(NA)	1 644.1
27526	Other general job printing (lithographic) ²	(NA)	9 123.0	(NA)	5 597.8
27526 11	Newspapers	478	889.7	369	668.2
	Scientific and technical recording charts and chart paper:				
27526 16	Sheet-fed	40	137.4	48	40.0
27526 18	Web-fed	5		10	24.9
	Map, atlas, and globe cover printing, including road maps and strip maps	63	63.0	52	49.2
	Calendars and calendar pads:				
27526 36	Sheet-fed	171	168.2	130	105.3
27526 38	Web-fed	43	208.6	24	34.6
27526 44	Ticket, coupon, and food and beverage check printing, including transportation and amusement	91	150.3	45	59.4
27526 47	Playing cards, printed	15	91.6	6	57.4
27526 51	Decalcomanias and pressure-sensitives (self-adhesive), including bumper stickers, etc., excluding labels	21	27.3	17	14.3
27526 71	Trading stamps and all types of seals, including private and decorative stamps	4	7.3	4	21.6
27526 77	Printing on metal	26	413.7	(NA)	234.9
27526 83	Credit and identification cards printed (plastics, paper laminations, etc.)	27	64.4	12	31.8

See footnotes at end of table.

27B-16 COMMERCIAL PRINT. & MANIFOLD BUS. FORMS

MANUFACTURES—INDUSTRY SERIES

Table 6a. Product and Product Classes—Value of Shipments by All Producers: 1992 and 1987—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendixes. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	1992		1987	
		Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)	Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)
2752—	COMMERCIAL PRINTING, LITHOGRAPHIC (OFFSET)—Con.				
27526	Other general job printing (lithographic) ² —Con.				
27526 84	Business cards -----	279	204.7	(NA)	(⁵)
	Business forms, n.e.c., excluding blankbooks and looseleaf forms:				
27526 92	Sheet-fed -----	566	364.6	387	211.4
27526 94	Web-fed -----	128	219.4	79	143.5
27526 95	Art reproductions and picture prints -----	161	102.2	72	59.6
27526 96	Quick printing -----	1 885	759.6	982	430.5
	All other general commercial lithographic printing, n.e.c.:				
27526 97	Sheet-fed -----	887	1 708.4	979	⁵¹ 562.7
27526 99	Web-fed -----	260	948.0	154	441.1
27526 00	Other general job printing (lithographic), n.s.k. -----	(NA)	2 594.5	(NA)	1 407.5
27520	Commercial printing, lithographic (offset), n.s.k. -----	(NA)	8 080.1	(NA)	7 831.6
27520 00	Commercial printing, lithographic (offset), n.s.k. ⁶ -----	(NA)	6 232.9	(NA)	6 226.4
27520 02	Commercial printing, lithographic (offset), n.s.k. ⁷ -----	(NA)	1 847.2	(NA)	1 605.2
2754—	COMMERCIAL PRINTING, GRAVURE				
	Total -----	(NA)	3 433.2	(NA)	2 740.2
27541	Magazine and periodical printing (gravure) ² -----	(NA)	551.1	(NA)	562.1
27541 33	Magazines and periodicals (excluding magazine and comic supplements for Sunday newspapers) -----	14	398.2	7	428.7
27541 35	Magazine and comic supplements for Sunday newspapers -----	4	152.7	5	108.3
27541 00	Magazine and periodical printing (gravure), n.s.k. -----	(NA)	.2	(NA)	25.1
27542	Label and wrapper printing (gravure) ² -----	(NA)	528.3	(NA)	434.4
	Printed labels, custom and stock, including bordered:				
	Made of paper:				
27542 11	Flat (except pressure-sensitive) -----	9	85.3	9	89.5
27542 13	Rolls (except pressure-sensitive) -----	14	198.1	17	169.9
27542 15	Pressure-sensitive (self-adhesive) -----	6	5.5	6	4.9
27542 17	Made of other materials, except cloth -----	9	59.3	7	71.6
	Printed rolls and sheets for packaging purposes (printing only):				
27542 32	Paper (single-web) -----	11	155.9	12	37.9
27542 37	Other, including multiweb structures -----	5		5	44.8
27542 00	Label and wrapper printing (gravure), n.s.k. -----	(NA)	24.2	(NA)	15.8
27543	Catalog and directory printing (gravure) ² -----	(NA)	883.1	(NA)	945.1
27543 00	Catalogs and directories (including direct mail catalogs and telephone and business reference services directories) -----	10	883.1	(NA)	945.1
27545	Advertising printing (gravure) ² -----	(NA)	930.7	(NA)	479.0
27545 11	Direct mail, including circulars, letters, pamphlets, cards, and printed envelopes -----	26			
27545 45	Preprinted newspaper inserts (advertising supplements not regularly issued) -----	6	923.9	(NA)	474.5
27545 48	Other advertising printing, including shopping news, brochures, book jackets, etc. -----	26			
27545 00	Advertising printing (gravure), n.s.k. -----	(NA)	6.8	(NA)	4.5
27546	Other commercial printing (gravure) ² -----	(NA)	333.3	(NA)	176.1
27546 51	Decalcomanias and pressure-sensitives (self-adhesive), including bumper stickers, etc., except labels -----	6	43.1	11	23.2
27546 95	All other general commercial gravure printing, n.e.c. (including customized stationery and business cards) -----	45	280.4	24	144.1
27546 00	Other commercial printing (gravure), n.s.k. -----	(NA)	9.8	(NA)	8.8
27540	Commercial printing, gravure, n.s.k. -----	(NA)	206.6	(NA)	143.4
27540 00	Commercial printing, gravure, n.s.k. ³ -----	(NA)	141.4	(NA)	113.9
27540 02	Commercial printing, gravure, n.s.k. ⁹ -----	(NA)	65.2	(NA)	29.5
2759—	COMMERCIAL PRINTING, N.E.C.				
	Total -----	(NA)	9 231.5	(NA)	9 112.0
27591	Magazine and periodical printing (letterpress) ² -----	(NA)	62.1	(NA)	157.8
27591 12	Magazines and periodicals (except magazine and comic supplements for Sunday newspapers) -----	19	34.9	40	86.8
27591 14	Magazine and comic supplements for Sunday newspapers -----	—		11	31.5
27591 00	Magazine and periodical printing (letterpress), n.s.k. -----	(NA)	27.2	(NA)	39.5
27592	Label and wrapper printing (letterpress) ² -----	(NA)	282.4	(NA)	422.5
	Printed labels, custom and stock, including bordered:				
	Made of paper:				
27592 12	Flat (except pressure-sensitive) ¹⁰ -----	21	27.7	45	42.7
27592 14	Rolls (except pressure-sensitive) ¹⁰ -----	8	20.3	14	66.3
	Pressure-sensitive (self-adhesive):				
27592 16	Flat ¹⁰ -----	23	23.6	21	35.3
27592 18	Rolls ¹⁰ -----	47	120.1	61	129.9
27592 21	Made of other materials, except cloth -----	10	23.6	10	17.5
	Printed rolls and sheets for packaging purposes:				
27592 23	Paper (single-web) -----	12	28.4	15	38.7
27592 27	Other (including multiweb structures) -----	3		2	29.3
27592 00	Label and wrapper printing (letterpress), n.s.k. -----	(NA)	38.6	(NA)	62.8
27593	Catalog and directory printing (letterpress) ² -----	(NA)	90.0	(NA)	224.3
27593 12	Catalogs, including direct mail -----	12		41	117.8
27593 18	Directories, including telephone and business reference services -----	4	72.3	9	79.2
27593 00	Catalog and directory printing (letterpress), n.s.k. -----	(NA)	17.6	(NA)	27.3

See footnotes at end of table.

Table 6a. Product and Product Classes—Value of Shipments by All Producers: 1992 and 1987—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendixes. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	1992		1987	
		Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)	Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)
2759—	COMMERCIAL PRINTING, N.E.C.—Con.				
27594	Financial and legal printing (letterpress) ² -----	(NA)	73.9	(NA)	267.8
27594 11	SEC filing and prospectuses -----	2	(D)	9	36.2
27594 13	Annual reports and other corporate financial printing -----	9	12.2	31	46.6
27594 15	Other financial and legal printing (including insurance forms, security certificates, briefs, etc.) -----	15	(D)	40	36.0
27594 17	Bank printing (including deposit slips, counter checks, business checks, etc., excluding checkbooks and bank forms) -----	15	12.5	29	97.0
27594 19	Bank form printing, including passbooks, debit/ credit slips, ledger and statement sheets, installment-loan coupons, etc. -----	7	8.6	20	24.4
27594 00	Financial and legal printing (letterpress), n.s.k. -----	(NA)	27.2	(NA)	27.7
27595	Advertising printing (letterpress) ² -----	(NA)	331.5	(NA)	592.4
27595 12	Direct mail (including circulars, letters, pamphlets, cards, and printed envelopes) -----	71	118.8	104	203.0
	Display advertising:				
27595 14	Posters (including outdoor advertising, car cards, window) -----	18	17.0	41	23.9
27595 16	Counter, floor display, point-of-purchase, and other printed display material -----	15	25.0	33	36.1
	Preprinted newspaper inserts (advertising supplements not regularly issued):				
27595 18	Rolls, including hi-fi and specticolor -----	5	7.4	26	60.0
27595 20	Sections (2 pages or more) -----	6	6.4	17	47.6
27595 22	Shopping news -----	2	1.1	12	7.2
27595 24	Other advertising printing, including brochures, pamphlets, book jackets, magazine inserts, circular folders, etc. -----	74	82.4	133	134.6
27595 00	Advertising printing (letterpress), n.s.k. -----	(NA)	73.5	(NA)	80.1
27596	Other general job printing (letterpress) ² -----	(NA)	885.3	(NA)	1 239.2
27596 11	Scientific and technical recording charts and chart paper (containing preprinted grids and scale markings) -----	8	22.4	4	49.0
27596 13	Newspapers -----	30	67.0	76	230.9
27596 15	Decalcomanias and pressure-sensitives (self-adhesive), including bumper stickers, etc., excluding labels -----	35	38.6	17	15.6
27596 16	Business cards -----	28	21.4	(NA)	(¹¹)
27596 17	Business forms, not elsewhere classified, excluding blankbooks and looseleaf forms -----	55	69.5	107	111.5
27596 19	Tags printed, including embossed -----	35	66.6	34	61.6
27596 21	Ticket, coupon, and food and beverage check printing, including transportation and amusement -----	20	38.4	22	38.2
27596 23	Calendars and calendar pads -----	11	29.2	28	119.1
27596 27	All other general commercial letterpress printing, n.e.c. (including customized stationery) -----	194	239.8	(NA)	¹¹ 372.6
27596 00	Other general job printing (letterpress), n.s.k. -----	(NA)	292.3	(NA)	240.8
27598	Screen printing, except on textiles ² -----	(NA)	1 909.0	(NA)	1 189.9
	Printed labels, custom and stock (including bordered):				
	Made of paper:				
	Pressure-sensitive:				
27598 11	Flat -----	51	121.5	48	72.9
27598 13	Rolls -----	19	56.8	13	44.2
27598 15	Other paper labels -----	9	15.8	9	8.6
27598 17	Made of other materials, except cloth -----	89	210.4	41	103.4
	Advertising printing:				
	Display advertising:				
27598 19	Posters (including outdoor advertising, car cards, window) -----	132	176.3	126	107.7
27598 21	Counter, floor display, point-of-purchase, and other printed display material -----	101	125.3	84	89.0
27598 23	Other advertising printing -----	59	83.4	35	22.7
	Other general job printing:				
27598 25	Decalcomanias and pressure-sensitives (self-adhesive), including bumper stickers, etc., excluding labels -----	183	405.0	156	261.4
27598 27	Printing on metal -----	96	86.7	68	67.1
27598 29	Printing on glass or plastics containers for others -----	56	98.8	39	57.9
27598 31	All other general commercial screen printing, n.e.c. (excluding printing on apparel or fabrics) -----	104	199.5	93	153.8
27598 00	Screen printing, except on textiles, n.s.k. -----	(NA)	329.3	(NA)	201.2
27599	Engraving ² -----	(NA)	299.7	(NA)	323.5
27599 12	Security -----	2		4	91.4
27599 22	Social -----	21	119.4	31	32.3
	Commercial:				
27599 33	Business cards -----	33	21.3	165	174.8
27599 35	Other commercial engraving -----	63	97.4	(NA)	25.1
27599 00	Engraving, n.s.k. -----	(NA)	61.7	(NA)	
2759A	Nonimpact printing, using laser and ink-jet equipment ² -----	(NA)	175.1	(NA)	109.7
2759A 00	Nonimpact printing, using laser and ink-jet equipment -----	108	175.1	54	109.7
2759B	Label and wrapper printing (flexographic) ² -----	(NA)	1 988.4	(NA)	¹² 075.2
	Printed labels, custom and stock (including bordered):				
	Made of paper:				
2759B 14	Flat (except pressure-sensitive) -----	22	27.8	24	33.9
2759B 16	Rolls (except pressure-sensitive) -----	49	129.3	35	61.6
	Pressure-sensitive:				
2759B 18	Flat -----	72	242.4	48	54.0
2759B 20	Rolls -----	248	930.8	160	522.3
2759B 22	Made of other materials, except cloth -----	48	121.8	36	59.9
	Printed rolls and sheets for packaging purposes (printing only):				
2759B 26	Paper (single-web) -----	32	111.0	23	41.3
2759B 28	Polyethylene (single-web) -----	32	146.6	25	82.5
2759B 30	Other, including multiweb structures -----	25	98.6	(NA)	109.3
2759B 00	Label and wrapper printing (flexographic), n.s.k. -----	(NA)	180.1	(NA)	¹³ 110.4

See footnotes at end of table.

Table 6a. Product and Product Classes—Value of Shipments by All Producers: 1992 and 1987—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendixes. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	1992		1987	
		Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)	Number of companies with shipments of \$100,000 or more	Value of product shipments ¹ (million dollars)
2759—	COMMERCIAL PRINTING, N.E.C.—Con.				
2759C	Flexographic printing, not elsewhere classified (excluding labels and wrappers) ² -----	(NA)	311.9	(NA)	¹⁴ 156.2
2759C 29	Magazine and periodical printing-----	2		(NA)	(¹⁵)
2759C 31	Magazine and comic supplements for Sunday newspapers-----	3		5	55.5
2759C 32	Financial and legal printing (including annual corporate reports, bank printing (except checkbooks), etc.)-----	1	134.1	4	10.8
2759C 34	Advertising printing, including direct mail, display, preprinted newspaper inserts, book jackets, shopping news-----	10		11	18.6
2759C 36	Newspapers, except shopping news-----	8	4.7	10	7.6
2759C 38	All other flexographic printing, n.e.c.-----	55	133.4	(NA)	¹⁵ 63.6
2759C 00	Flexographic printing, not elsewhere classified (excluding labels and wrappers), n.s.k.-----	(NA)	39.8	(NA)	(¹³)
27590	Commercial printing, n.e.c., n.s.k.-----	(NA)	2 822.5	(NA)	3 353.5
27590 00	Commercial printing, n.e.c., n.s.k. ⁶ -----	(NA)	2 143.3	(NA)	2 585.5
27590 02	Commercial printing, n.e.c., n.s.k. ⁷ -----	(NA)	679.1	(NA)	768.0
2761—	MANIFOLD BUSINESS FORMS				
	Total-----	(NA)	6 795.3	(NA)	6 787.7
27612	Unit set forms, loose or bound ¹⁶ -----	(NA)	1 483.6	(NA)	1 418.9
27612 11	Label/form combinations-----	16	21.1	(NA)	(NA)
	Stock, including imprinted:				
27612 13	One-time carbon-----	31	139.2	(NA)	(NA)
27612 15	Carbonless-----	42	98.0	(NA)	(NA)
	Custom printed:				
27612 53	One-time carbon-----	183	383.1	(NA)	(NA)
27612 55	Carbonless-----	254	628.8	(NA)	(NA)
27612 61	Tabulating card sets-----	10	9.4	(NA)	(NA)
27612 00	Unit set forms, loose or bound, n.s.k.-----	(NA)	203.9	(NA)	(NA)
27613	Manifold books and pegboard accounting systems ¹⁶ -----	(NA)	334.1	(NA)	261.0
27613 11	Pegboard accounting systems-----	18	103.8	(NA)	(NA)
27613 13	Sales and other manifold books-----	33	170.8	(NA)	(NA)
27613 00	Manifold books and pegboard accounting systems, n.s.k.-----	(NA)	59.5	(NA)	(NA)
27615	Custom continuous forms ¹⁶ -----	(NA)	2 594.1	(NA)	2 726.4
27615 31	Label/form combinations-----	45	105.6	(NA)	(NA)
27615 35	Jumbo roll-feed forms-----	18	88.3	(NA)	(NA)
	Self-mailer forms:				
27615 41	Peel-back mailers-----	20	61.2	(NA)	(NA)
27615 43	Insert mailers-----	19	100.1	(NA)	(NA)
27615 45	Other-----	11	31.0	(NA)	(NA)
	All other custom continuous:				
	One part:				
27615 55	With product affixed-----	34	82.8	(NA)	(NA)
27615 61	Other-----	147	522.7	(NA)	(NA)
	Multiple parts:				
27615 63	One-time carbon-----	170	393.4	(NA)	(NA)
27615 65	Carbonless-----	225	911.4	(NA)	(NA)
27615 00	Custom continuous forms, n.s.k.-----	(NA)	297.6	(NA)	(NA)
27617	Stock continuous forms ¹⁶ -----	(NA)	1 534.7	(NA)	1 684.2
27617 61	Label/form combinations-----	6	46.5	(NA)	(NA)
27617 63	Jumbo roll-feed forms-----	6	19.6	(NA)	(NA)
	All other stock continuous:				
	One part:				
27617 65	Multiple parts-----	38	811.4	(NA)	(NA)
	Multiple parts:				
27617 73	One-time carbon-----	26	89.1	(NA)	(NA)
27617 75	Carbonless-----	30	260.2	(NA)	(NA)
27617 00	Stock continuous forms, n.s.k.-----	(NA)	307.9	(NA)	(NA)
27610	Manifold business forms, n.s.k.-----	(NA)	848.8	(NA)	697.2
27610 00	Manifold business forms, n.s.k. ¹⁷ -----	(NA)	777.8	(NA)	473.9
27610 02	Manifold business forms, n.s.k. ¹⁸ -----	(NA)	71.1	(NA)	223.4

¹Data reported by all producers, not just those with shipments of \$100,000 or more.

²Data for this product class represent value of receipts rather than value of shipments.

³For 1987, data for product codes 27522 11, 27522 13, and 27522 17 do not include marginally punched labels, which had 5 companies with shipments greater than \$100,000 and product shipments of \$17.7 million.

⁴For 1987, data for product code 27525 45 were included in data for product codes 27525 52 and 27525 54.

⁵For 1987, data for product code 27526 84 were included in data for product code 27526 97.

⁶Typically for establishments with 5 employees or more.

⁷Typically for establishments with less than 5 employees.

⁸Typically for establishments with 10 employees or more.

⁹Typically for establishments with less than 10 employees.

¹⁰For 1987, data for product codes 27592 12, 27592 14, 27592 16, and 27592 18 do not include marginally punched labels, which had 5 companies with shipments greater than \$100,000 and product shipments of \$4.2 million.

¹¹For 1987, data for product code 27596 16 were included in data for product code 27596 27.

¹²For 1987, total value of product shipments for product class 2759B includes data for product code 2759C 00.

¹³For 1987, data for product code 2759C 00 were included in data for product code 2759B 00.

¹⁴For 1987, total value of shipments for product class 2759C did not include data for product code 2759C 00.

¹⁵For 1987, data for product code 2759C 29 were included in data for product code 2759C 38.

¹⁶For 1987, no product class detail was collected.

¹⁷Typically for establishments with 20 employees or more.

¹⁸Typically for establishments with less than 20 employees.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1992 and 1987

[Million dollars. Product classes shown are those where the data are geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1992. For meaning of abbreviations and symbols, see introductory text]

Product class and geographic area	1992 value of product shipments	1987 value of product shipments	Product class and geographic area	1992 value of product shipments	1987 value of product shipments
27521, MAGAZINE AND PERIODICAL PRINTING (LITHOGRAPHIC)			27523, CATALOG AND DIRECTORY PRINTING (LITHOGRAPHIC)		
United States	4 664.3	3 779.6	United States	3 943.3	2 868.7
Alabama	41.5	11.7	Alabama	56.9	(NA)
Arizona	14.0	14.4	Arizona	41.6	46.2
California	328.1	301.5	Arkansas	52.3	(NA)
Colorado	33.8	32.0	California	446.7	272.0
Connecticut	24.1	86.1	Colorado	94.3	66.5
District of Columbia	16.2	7.9	Connecticut	97.1	66.7
Florida	172.0	60.7	Delaware	2.2	(NA)
Georgia	135.1	73.5	Florida	156.8	79.5
Illinois	430.2	588.9	Georgia	168.8	180.3
Indiana	54.4	16.0	Illinois	474.3	397.1
Iowa	66.6	62.5	Indiana	72.0	51.4
Kansas	23.9	29.6	Iowa	46.4	27.7
Kentucky	366.7	(NA)	Kansas	20.0	14.2
Louisiana	12.0	3.0	Kentucky	59.6	29.5
Maryland	151.3	197.1	Louisiana	4.0	(NA)
Massachusetts	25.2	23.8	Maryland	49.8	50.7
Michigan	108.7	49.4	Massachusetts	57.2	95.4
Minnesota	245.1	217.1	Michigan	76.1	57.8
Missouri	65.4	50.5	Minnesota	182.1	147.4
Nevada	36.1	(NA)	Missouri	83.5	82.0
New Jersey	42.9	55.6	Montana	2.1	(NA)
New Mexico	2.2	(NA)	New Hampshire	9.0	3.6
New York	230.8	167.3	New Jersey	47.3	92.3
North Carolina	31.0	18.0	New York	127.9	75.5
Ohio	158.1	169.8	North Carolina	26.3	25.6
Oklahoma	56.2	39.8	Ohio	194.9	110.0
Oregon	14.5	13.6	Oklahoma	56.1	7.6
Pennsylvania	293.6	209.9	Oregon	108.3	83.4
Rhode Island	2.6	(NA)	Pennsylvania	363.8	218.2
South Carolina	14.5	9.6	Rhode Island	17.9	12.6
Tennessee	237.6	112.3	South Carolina	5.2	6.6
Texas	170.3	176.1	South Dakota	4.9	(NA)
Utah	7.3	8.2	Tennessee	49.8	41.2
Virginia	210.8	149.5	Texas	186.8	86.9
Washington	22.9	27.6	Utah	3.3	2.5
West Virginia	2.2	(NA)	Vermont	5.4	(NA)
Wisconsin	526.1	317.6	Virginia	45.2	23.7
			Washington	23.7	21.9
			Wisconsin	238.8	187.5
27522, LABEL AND WRAPPER PRINTING (LITHOGRAPHIC)			27524, FINANCIAL AND LEGAL PRINTING (LITHOGRAPHIC), EXCLUDING CHECKBOOKS		
United States	1 607.1	794.0	United States	1 787.4	1 582.5
Alabama	17.9	4.9	Alabama	6.0	10.5
Arizona	2.5	(NA)	Arizona	18.7	7.0
Arkansas	3.2	2.6	California	266.1	178.7
California	170.1	101.1	Colorado	18.5	18.0
Colorado	16.2	(NA)	Connecticut	23.4	22.6
Connecticut	5.2	3.1	District of Columbia	2.3	(NA)
Florida	16.9	6.6	Florida	15.1	21.9
Georgia	19.6	4.9	Georgia	37.1	18.9
Illinois	233.5	121.1	Illinois	154.4	111.0
Indiana	60.0	42.2	Indiana	36.7	25.7
Iowa	11.3	6.4	Iowa	15.0	4.6
Kansas	40.2	3.4	Kansas	36.3	16.3
Kentucky	31.8	3.1	Kentucky	16.7	12.2
Louisiana	10.4	(NA)	Louisiana	4.5	2.4
Maryland	20.8	15.3	Maryland	46.8	39.1
Massachusetts	20.6	15.1	Massachusetts	128.6	107.8
Michigan	58.9	41.8	Michigan	42.0	27.5
Minnesota	74.9	27.4	Minnesota	59.3	13.4
Missouri	45.5	36.5	Mississippi	3.9	(NA)
New Jersey	60.3	16.5	Missouri	44.7	31.7
New York	86.4	61.9	Montana	2.3	(NA)
North Carolina	103.6	46.6	Nebraska	7.5	4.9
Ohio	88.3	32.3	New Hampshire	7.3	(NA)
Oklahoma	7.8	(NA)	New Jersey	58.5	55.0
Oregon	5.9	(NA)	New York	192.9	389.1
Pennsylvania	128.5	28.1	North Carolina	23.6	8.9
South Carolina	16.5	8.7	Ohio	63.3	56.7
Tennessee	17.4	7.4	Oklahoma	9.0	2.4
Texas	42.6	18.6	Oregon	25.7	10.5
Utah	3.0	(NA)	Pennsylvania	174.9	162.8
Virginia	31.8	(NA)	Rhode Island	3.3	5.4
Washington	41.5	3.6	South Carolina	2.6	3.5
Wisconsin	46.6	25.7	Tennessee	28.9	20.3
			Texas	114.0	95.6
			Utah	13.9	10.7
			Virginia	31.0	17.9
			Washington	17.0	10.6
			West Virginia	3.0	(NA)
			Wisconsin	21.3	16.3

See footnotes at end of table.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1992 and 1987—Con.

[Million dollars. Product classes shown are those where the data are geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1992. For meaning of abbreviations and symbols, see introductory text]

Product class and geographic area	1992 value of product shipments	1987 value of product shipments	Product class and geographic area	1992 value of product shipments	1987 value of product shipments
27525, ADVERTISING PRINTING (LITHOGRAPHIC)			27526, OTHER GENERAL JOB PRINTING (LITHOGRAPHIC)—Con.		
United States	13 219.2	9 688.9	New Jersey	358.4	246.0
Alabama	71.1	70.2	New Mexico	21.2	12.7
Alaska	3.7	(NA)	New York	752.8	361.8
Arizona	90.2	57.8	North Carolina	155.9	82.7
Arkansas	37.4	33.9	North Dakota	8.5	7.2
California	1 588.1	1 163.8	Ohio	418.7	237.4
Colorado	131.1	99.3	Oklahoma	44.8	29.4
Connecticut	298.3	281.3	Oregon	90.1	56.7
Delaware	11.9	15.8	Pennsylvania	357.8	235.8
District of Columbia	14.6	14.9	Rhode Island	33.4	25.7
Florida	238.1	227.2	South Carolina	49.8	37.3
Georgia	298.0	230.0	South Dakota	11.4	6.7
Hawaii	22.5	21.9	Tennessee	140.7	94.0
Idaho	11.9	7.5	Texas	401.6	255.0
Illinois	1 446.6	1 023.6	Utah	41.2	13.6
Indiana	222.6	151.2	Vermont	17.9	16.5
Iowa	112.3	115.7	Virginia	314.7	259.4
Kansas	370.4	206.9	Washington	177.9	89.1
Kentucky	118.8	79.2	West Virginia	35.5	30.1
Louisiana	55.8	57.9	Wisconsin	298.0	177.6
Maine	34.3	21.5	Wyoming	5.1	(NA)
Maryland	253.7	217.1	27541, MAGAZINE AND PERIODICAL PRINTING (GRAVURE)		
Massachusetts	373.8	266.6	United States	551.1	562.1
Michigan	698.3	460.1	Illinois	127.9	(NA)
Minnesota	624.3	409.9	Tennessee	98.4	86.0
Mississippi	22.8	5.9	27542, LABEL AND WRAPPER PRINTING (GRAVURE)		
Missouri	392.0	251.7	United States	528.3	434.4
Montana	15.9	5.0	Illinois	24.6	17.2
Nebraska	42.2	42.9	Michigan	32.4	(NA)
Nevada	15.5	36.1	New Jersey	11.2	6.5
New Hampshire	35.1	36.4	Ohio	69.5	77.6
New Jersey	927.7	522.5	Tennessee	127.3	(NA)
New Mexico	13.0	9.0	Wisconsin	17.8	(NA)
New York	752.4	723.7	27543, CATALOG AND DIRECTORY PRINTING (GRAVURE)		
North Carolina	380.3	261.3	United States	883.1	945.1
North Dakota	11.1	10.8	Illinois	24.6	17.2
Ohio	685.7	581.2	Michigan	32.4	(NA)
Oklahoma	136.4	102.8	New Jersey	11.2	6.5
Oregon	206.5	109.0	Ohio	69.5	77.6
Pennsylvania	852.6	469.6	Tennessee	127.3	(NA)
Rhode Island	33.4	31.3	Wisconsin	17.8	(NA)
South Carolina	57.3	35.5	27544, CATALOG AND DIRECTORY PRINTING (GRAVURE)		
South Dakota	10.1	7.3	United States	883.1	945.1
Tennessee	191.9	131.3	Illinois	24.6	17.2
Texas	512.1	424.6	Michigan	32.4	(NA)
Utah	43.4	53.3	New Jersey	11.2	6.5
Vermont	23.2	10.3	Ohio	69.5	77.6
Virginia	227.5	159.9	Tennessee	127.3	(NA)
Washington	120.3	109.9	Wisconsin	17.8	(NA)
West Virginia	5.1	7.1	27545, ADVERTISING PRINTING (GRAVURE)		
Wisconsin	373.9	274.0	United States	930.7	479.0
Wyoming	3.9	(NA)	California	8.0	(NA)
27526, OTHER GENERAL JOB PRINTING (LITHOGRAPHIC)			Michigan	2.1	(NA)
United States	9 123.0	5 597.8	New York	3.4	(NA)
Alabama	88.5	60.0	27546, OTHER COMMERCIAL PRINTING (GRAVURE)		
Alaska	5.4	6.1	United States	333.3	176.1
Arizona	104.1	53.9	New Jersey	20.7	14.0
Arkansas	42.1	27.4	Pennsylvania	41.8	(NA)
California	938.0	574.7	27591, MAGAZINE AND PERIODICAL PRINTING (LETTERPRESS)		
Colorado	137.9	64.8	United States	62.1	157.8
Connecticut	96.7	117.7	California	6.2	11.1
Delaware	18.1	14.6	Connecticut	3.9	3.1
District of Columbia	32.2	25.4	New York	9.8	15.0
Florida	310.3	195.0	27592, LABEL AND WRAPPER PRINTING (LETTERPRESS)		
Georgia	183.5	158.2	United States	282.4	422.5
Hawaii	21.3	23.1	Arizona	6.5	(NA)
Idaho	53.4	21.0	California	18.5	31.1
Illinois	725.9	380.9	Connecticut	13.1	(NA)
Indiana	377.9	245.6	Georgia	8.3	3.0
Iowa	213.3	53.3	Illinois	14.4	68.3
Kansas	88.8	52.0	Indiana	2.9	(NA)
Kentucky	92.2	81.1	Michigan	4.2	6.4
Louisiana	51.1	28.2	Minnesota	26.5	13.8
Maine	24.8	29.3	New Jersey	36.2	19.4
Maryland	281.4	151.0	New York	18.9	29.6
Massachusetts	279.5	215.2	North Carolina	4.9	2.2
Michigan	257.1	170.5	Ohio	38.4	93.3
Minnesota	563.6	303.0	Pennsylvania	5.9	5.9
Mississippi	24.0	17.0	Texas	3.2	3.0
Missouri	256.8	133.6	Wisconsin	27.1	13.2
Montana	12.1	8.5			
Nebraska	54.8	37.3			
Nevada	19.7	24.5			
New Hampshire	32.9	16.2			

See footnotes at end of table.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1992 and 1987—Con.

[Million dollars. Product classes shown are those where the data are geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1992. For meaning of abbreviations and symbols, see introductory text]

Product class and geographic area	1992 value of product shipments	1987 value of product shipments	Product class and geographic area	1992 value of product shipments	1987 value of product shipments
27593, CATALOG AND DIRECTORY PRINTING (LETTERPRESS)			27598, SCREEN PRINTING, EXCEPT ON TEXTILES		
United States	90.0	224.3	United States	1 909.0	1 189.9
Ohio	2.5	(NA)	Alabama	4.4	(NA)
Tennessee	2.2	(NA)	Arizona	13.7	13.9
Texas	2.4	3.4	Arkansas	2.8	3.4
			California	191.5	114.3
			Colorado	24.1	13.0
27594, FINANCIAL AND LEGAL PRINTING (LETTERPRESS)			Connecticut.....	35.6	24.8
United States	73.9	267.8	Florida	42.6	27.0
California	3.4	15.4	Georgia	16.0	14.9
Connecticut.....	9.1	7.3	Illinois.....	121.4	88.7
Michigan	2.5	4.9	Indiana	47.9	30.9
New Jersey.....	9.1	11.4	Iowa	23.0	5.5
New York	16.4	37.4	Kansas	97.8	59.7
Ohio	4.4	5.3	Kentucky	23.3	10.1
Texas	3.2	28.5	Louisiana.....	7.1	6.7
			Maine	2.6	(NA)
27595, ADVERTISING PRINTING (LETTERPRESS)			Maryland	20.1	6.1
United States	331.5	592.4	Massachusetts.....	58.9	44.0
Arkansas	2.1	(NA)	Michigan	70.6	50.7
California	14.8	32.1	Minnesota.....	126.1	40.7
Florida	21.3	13.6	Mississippi.....	5.9	3.5
Illinois.....	45.1	61.7	Missouri	38.2	27.7
Indiana	3.2	8.8	Nebraska	5.6	5.8
Kentucky	3.4	(NA)	Nevada	14.6	12.5
Maryland	6.8	13.3	New Hampshire.....	8.0	2.5
Massachusetts.....	7.8	21.6	New Jersey.....	73.1	75.4
Michigan	11.3	10.3	New York	62.8	43.2
Minnesota.....	12.6	13.9	North Carolina.....	39.1	14.5
Missouri	9.4	16.4	Ohio	237.8	118.1
New Jersey.....	3.2	30.0	Oklahoma	22.1	10.0
New York	61.7	113.7	Oregon	8.2	4.9
North Carolina.....	3.2	6.8	Pennsylvania.....	60.7	44.3
Ohio	12.0	37.0	Rhode Island.....	5.5	(NA)
Pennsylvania.....	10.4	31.3	South Carolina.....	17.0	12.1
Tennessee	2.3	17.9	South Dakota.....	6.1	(NA)
Texas	8.9	22.0	Tennessee.....	45.7	40.6
Virginia.....	7.7	(NA)	Texas	86.7	22.1
Wisconsin	7.9	7.8	Utah	9.9	5.5
			Virginia.....	9.6	6.8
			Washington.....	34.0	22.3
			Wisconsin.....	177.8	134.3
27596, OTHER GENERAL JOB PRINTING (LETTERPRESS)			27599, ENGRAVING		
United States	885.3	1 239.2	United States	299.7	323.5
Alabama	3.2	10.7	California	58.8	50.0
Arizona	5.4	12.8	Florida	4.5	3.0
Arkansas	10.9	9.6	Illinois.....	60.6	45.8
California	88.3	88.2	Indiana	7.5	(NA)
Colorado	5.4	7.6	Maryland	2.8	3.8
Connecticut.....	32.0	24.6	Massachusetts.....	20.9	24.5
Florida	18.9	23.0	Michigan	4.4	3.8
Georgia	16.5	12.1	Minnesota.....	4.9	2.5
Hawaii	4.2	(NA)	Missouri	2.1	(NA)
Illinois.....	54.7	51.9	New Jersey.....	15.0	12.3
Indiana	30.8	11.9	New York	33.1	60.5
Iowa	13.0	42.0	North Carolina.....	4.1	5.1
Kansas	2.4	8.8	Ohio	7.0	10.8
Kentucky	4.5	4.7	Tennessee.....	6.6	5.2
Louisiana.....	3.5	8.3	Texas	6.2	3.2
Maryland	33.9	16.0			
Massachusetts.....	27.0	41.5	2759A, NONIMPACT PRINTING, USING LASER AND INK-JET EQUIPMENT		
Michigan	24.4	40.0	United States	175.1	109.7
Minnesota.....	19.7	66.1	California	11.1	2.7
Mississippi.....	2.6	(NA)	Florida	3.6	(NA)
Missouri	10.7	35.2	Illinois.....	13.2	12.6
Nebraska	14.8	(NA)	Indiana	5.6	(NA)
New Jersey.....	31.0	56.5	Michigan	23.1	(NA)
New York	112.5	236.2	Minnesota.....	23.1	(NA)
North Carolina.....	8.0	17.5	New Jersey.....	11.5	(NA)
Ohio	39.4	63.7	New York	17.5	9.1
Oklahoma	2.6	7.2	North Carolina.....	2.6	(NA)
Oregon	3.8	7.4	Ohio	17.8	(NA)
Pennsylvania.....	77.2	61.2	Pennsylvania.....	2.7	(NA)
South Carolina.....	2.5	7.1	Texas	2.6	3.6
Tennessee.....	15.2	6.8	Virginia.....	2.5	(NA)
Texas	52.2	40.0			
Vermont	3.0	(NA)			
Virginia.....	8.5	10.9			
Washington.....	16.1	6.8			
Wisconsin	31.7	21.6			

See footnotes at end of table.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1992 and 1987—Con.

[Million dollars. Product classes shown are those where the data are geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1992. For meaning of abbreviations and symbols, see introductory text]

Product class and geographic area	1992 value of product shipments	1987 value of product shipments	Product class and geographic area	1992 value of product shipments	1987 value of product shipments
2759B, LABEL AND WRAPPER PRINTING (FLEXOGRAPHIC)			27612, UNIT SET FORMS, LOOSE OR BOUND—Con.		
United States	1 988.4	(NA)	Ohio	64.9	56.6
Alabama	6.7	(NA)	Oregon	34.0	40.8
Arizona	9.0	(NA)	Pennsylvania	166.0	93.5
Arkansas	14.1	(NA)	South Carolina	6.3	10.2
California	160.9	(NA)	Tennessee	118.7	18.6
Colorado	18.9	(NA)	Texas	116.8	91.3
Connecticut	34.2	(NA)	Virginia	22.8	30.8
Florida	41.8	(NA)	Washington	12.8	6.6
Georgia	51.7	(NA)	Wisconsin	16.2	29.2
Illinois	124.7	(NA)	27613, MANIFOLD BOOKS AND PEGBOARD ACCOUNTING SYSTEMS		
Indiana	87.6	(NA)	United States		
Iowa	6.3	(NA)	California	334.1	261.0
Kansas	48.1	(NA)	Florida	44.7	65.1
Kentucky	23.7	(NA)	Georgia	4.6	(NA)
Maryland	10.5	(NA)	Michigan	24.8	25.1
Massachusetts	62.3	(NA)	Michigan	6.4	2.3
Michigan	75.7	(NA)	New Jersey	4.2	2.5
Minnesota	50.8	(NA)	Ohio	31.5	35.6
Missouri	56.6	(NA)	Pennsylvania	3.6	(NA)
Nebraska	67.3	(NA)	Texas	12.6	41.8
New Hampshire	16.1	(NA)	27615, CUSTOM CONTINUOUS FORMS		
New Jersey	62.3	(NA)	United States		
New York	104.9	(NA)	Alabama	2 594.1	2 726.4
North Carolina	103.3	(NA)	Arizona	11.9	13.1
Ohio	275.3	(NA)	Arizona	18.0	17.7
Oregon	6.9	(NA)	Arkansas	84.4	74.8
Pennsylvania	106.5	(NA)	California	212.2	263.3
Rhode Island	3.1	(NA)	Colorado	15.5	23.8
South Carolina	18.9	(NA)	Connecticut	35.4	55.9
Tennessee	71.9	(NA)	Florida	47.6	35.6
Texas	49.2	(NA)	Georgia	80.2	71.6
Virginia	11.9	(NA)	Illinois	194.6	218.1
Washington	7.8	(NA)	Indiana	74.3	81.5
Wisconsin	133.2	(NA)	Iowa	119.4	97.8
2759C, FLEXOGRAPHIC PRINTING, NOT ELSEWHERE CLASSIFIED (EXCLUDING LABELS AND WRAPPERS)			Kansas	88.7	51.9
United States	311.9	(NA)	Kentucky	36.2	13.6
California	13.0	(NA)	Maryland	45.4	105.1
Georgia	9.8	(NA)	Massachusetts	14.6	26.5
Illinois	23.1	(NA)	Michigan	57.8	55.7
Maryland	2.5	(NA)	Minnesota	42.4	38.0
Minnesota	7.3	(NA)	Missouri	51.2	43.0
New Jersey	18.7	(NA)	New Jersey	44.5	56.6
New York	12.6	(NA)	New York	89.9	99.4
Ohio	12.1	(NA)	North Carolina	39.8	31.0
Texas	9.5	(NA)	Ohio	166.8	158.6
27612, UNIT SET FORMS, LOOSE OR BOUND			Oklahoma	37.8	(NA)
United States	1 483.6	1 418.9	Oregon	58.5	46.3
Arizona	10.1	11.7	Pennsylvania	193.6	241.4
California	111.6	121.5	South Carolina	45.2	(NA)
Colorado	21.3	7.1	Tennessee	50.1	54.2
Connecticut	21.2	32.3	Texas	162.3	176.0
Florida	25.2	25.9	Vermont	111.3	104.3
Georgia	38.5	36.8	Virginia	54.2	65.5
Illinois	124.9	135.4	Washington	11.7	31.4
Indiana	49.4	(NA)	Wisconsin	95.8	77.4
Iowa	37.4	20.2	27617, STOCK CONTINUOUS FORMS		
Kansas	46.0	39.5	United States		
Kentucky	40.7	43.8	Alabama	1 534.7	1 684.2
Louisiana	3.8	12.9	California	10.7	(NA)
Maryland	11.8	(NA)	California	130.6	196.0
Massachusetts	17.2	30.0	Illinois	125.8	114.0
Michigan	23.2	37.7	Indiana	110.2	(NA)
Minnesota	28.4	38.4	Iowa	50.2	66.3
Missouri	59.9	73.3	Maryland	69.2	(NA)
New Jersey	23.2	36.7	Missouri	69.8	80.2
New York	51.8	56.6	New York	7.6	15.5
North Carolina	41.8	46.6	North Carolina	15.8	(NA)
			Ohio	21.7	51.6
			Pennsylvania	307.3	300.1
			Tennessee	8.4	(NA)
			Texas	124.6	155.2
			Virginia	10.6	58.8

Note: For qualifications of data, see footnotes on table 6a.

Table 6c. Historical Statistics for Product Classes—Value Shipped by All Producers: 1992 and Earlier Years

[Million dollars. For meaning of abbreviations and symbols, see introductory text]

Product code	Product class	1992	1991 ¹	1990 ¹	1989 ¹	1988 ¹	1987	1982	1977
2752-	Commercial printing, lithographic (offset) -----	42 424.2	37 762.0	38 855.7	36 764.4	34 305.8	32 143.1	18 777.9	8 980.2
27521	Magazine and periodical printing (lithographic) -----	4 664.3	5 044.0	5 289.4	5 032.7	4 200.5	3 779.6	2 536.2	1 287.5
27522	Label and wrapper printing (lithographic) -----	1 607.1	1 247.7	1 257.7	1 166.1	864.5	794.0	677.0	391.3
27523	Catalog and directory printing (lithographic) -----	3 943.3	3 734.9	3 736.2	3 594.8	3 169.8	2 868.7	1 804.2	838.3
27524	Financial and legal printing (lithographic), excluding checkbooks -----	1 787.4	1 276.8	1 601.6	1 528.6	1 435.8	1 582.5	957.5	471.6
27525	Advertising printing (lithographic) -----	13 219.2	12 446.4	12 490.9	11 668.7	10 614.3	9 688.9	4 985.1	2 407.7
27526	Other general job printing (lithographic) -----	9 123.0	6 656.0	6 735.1	5 934.7	5 639.1	5 597.8	3 343.3	2 178.1
27520	Commercial printing, lithographic (offset), n.s.k. -----	8 080.1	7 356.1	7 744.9	7 838.8	8 381.8	7 831.6	4 474.6	1 405.7
2754-	Commercial printing, gravure -----	3 433.2	3 239.0	3 299.7	3 059.5	2 934.4	2 740.2	2 159.0	1 108.3
27541	Magazine and periodical printing (gravure) -----	551.1	525.2	531.8	583.5	544.7	562.1	521.0	275.5
27542	Label and wrapper printing (gravure) -----	528.3	394.8	407.8	421.6	448.4	434.4	437.4	276.2
27543	Catalog and directory printing (gravure) -----	883.1	994.6	1 001.0	855.7	1 019.8	945.1	651.2	233.5
27545	Advertising printing (gravure) -----	930.7	895.6	940.1	801.7	585.4	479.0	286.4	143.2
27546	Other commercial printing (gravure) -----	333.3	223.0	209.4	197.4	190.5	176.1	102.7	91.5
27540	Commercial printing, gravure, n.s.k. -----	206.6	205.8	209.7	199.7	145.6	143.4	160.4	88.4
2759-	Commercial printing, n.e.c. -----	9 231.5	10 760.4	10 416.6	9 797.1	9 356.5	9 112.0	6 420.0	(NA)
27591	Magazine and periodical printing (letterpress) -----	62.1	178.4	158.6	154.6	151.2	157.8	2267.2	(NA)
27592	Label and wrapper printing (letterpress) -----	282.4	495.1	474.7	437.3	402.5	422.5	483.8	(NA)
27593	Catalog and directory printing (letterpress) -----	90.0	166.1	175.5	189.2	203.1	224.0	224.0	(NA)
27594	Financial and legal printing (letterpress) -----	73.9	275.9	328.6	318.2	267.5	267.8	2339.4	(NA)
27595	Advertising printing (letterpress) -----	331.5	749.1	624.8	670.1	623.7	592.4	2337.5	(NA)
27596	Other general job printing (letterpress) -----	885.3	1 275.1	1 214.2	1 203.3	1 219.1	1 239.2	2798.2	(NA)
27598	Screen printing, except on textiles -----	1 909.0	1 429.2	1 406.8	1 409.8	1 312.8	1 189.9	696.9	314.7
27599	Engraving -----	299.7	452.8	480.9	506.5	346.3	323.5	228.2	(NA)
2759A	Nonimpact printing, using laser and ink-jet equipment -----	175.1	241.1	204.9	194.7	127.3	109.7	(NA)	(NA)
2759B	Label and wrapper printing (flexographic) -----	1 988.4							
2759C	Flexographic printing, not elsewhere classified (excluding labels and wrappers) -----	311.9	1 703.2	1 661.2	1 538.8	1 319.7	1 231.4	2595.6	(NA)
27590	Commercial printing, n.e.c., n.s.k. -----	2 822.5	3 794.4	3 641.0	3 220.0	3 383.3	3 353.5	2 549.2	(NA)
2761-	Manifold business forms -----	6 795.3	6 783.8	7 278.6	7 120.7	7 262.2	6 787.7	4 812.2	2 702.6
27612	Unit set forms, loose or bound -----	1 483.6	1 549.9	1 611.0	1 584.2	1 523.1	1 418.9	1 187.7	885.3
27613	Manifold books and pegboard accounting systems -----	334.1	254.3	259.9	248.3	271.4	261.0	238.5	129.5
27615	Custom continuous forms -----	2 594.1	3 005.2	3 164.4	3 123.8	2 975.9	2 726.4	1 731.6	896.0
27617	Stock continuous forms -----	1 534.7	1 614.6	1 863.3	1 825.5	1 771.7	1 684.2	1 270.4	622.2
27610	Manifold business forms, n.s.k. -----	848.8	359.7	380.0	338.9	720.1	697.2	384.0	169.7

¹Figures are estimates derived from a representative sample of manufacturing establishments. Standard errors associated with estimates are published in annual survey of manufactures publications for this period.

²For 1982, product classes 27591, 27593, 27594, 27595, and 27596 included some printing by the flexographic process. Thus, 1982 data for letterpress and flexographic product classes may not be completely comparable with data for the years after 1982.

Table 7. Materials Consumed by Kind: 1992 and 1987

[Includes cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendixes. For meaning of abbreviations and symbols, see introductory text]

Material code	Material	1992 delivered cost (million dollars)	1987 delivered cost (million dollars)
INDUSTRY 2752, COMMERCIAL PRINTING, LITHOGRAPHIC			
Materials, ingredients, containers, and supplies -----		15 389.0	12 174.8
262112	Newsprint -----	931.8	881.2
Uncoated paper:			
262121	Sheets -----	1 064.7	718.8
262122	Rolls -----	1 611.6	1 061.1
Coated paper:			
262123	Sheets -----	1 347.4	1 019.3
262124	Rolls -----	2 016.4	1 604.0
267231	Pressure-sensitive base stock, self-adhesive, including paper, film, foil, etc. -	110.4	24.2
220011	Cloth and nonwoven fabrics for hardbound book covers -----	3.0	7.9
289101	Glues and adhesives -----	42.9	44.5
289301	Printing inks (complete formulations) -----	805.2	539.6
386101	Light sensitive films and papers -----	206.8	135.8
386100	Unexposed photosensitive printing plates -----	131.1	(¹)
279600	Printing plates, prepared for printing -----	145.0	(¹)
279637	Engraved printing cylinders for gravure printing -----	3.3	(¹)
265001	Paperboard containers, boxes, and corrugated paperboard -----	126.6	(¹)
970099	All other materials and components, parts, containers, and supplies -----	1 310.6	11 449.0
971000	Materials, ingredients, containers, and supplies, n.s.k. ² -----	5 532.4	4 689.4
INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE			
Materials, ingredients, containers, and supplies -----		1 727.7	1 413.6
262112	Newsprint -----	(³)	114.4
Uncoated paper:			
262121	Sheets -----	2.3	1.2
262122	Rolls -----	459.5	225.0
Coated paper:			
262123	Sheets -----	17.7	2.0
262124	Rolls -----	354.7	380.6
267231	Pressure-sensitive base stock, self-adhesive, including paper, film, foil, etc. -	9.0	(¹)
289101	Glues and adhesives -----	9.1	8.2
289301	Printing inks (complete formulations) -----	458.5	300.0
386101	Light sensitive films and papers -----	4.3	5.6
386100	Unexposed photosensitive printing plates -----	.4	(¹)
279600	Printing plates, prepared for printing -----	1.9	(¹)

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1992 and 1987—Con.

[Includes cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendixes. For meaning of abbreviations and symbols, see introductory text]

Material code	Material	1992 delivered cost (million dollars)	1987 delivered cost (million dollars)
INDUSTRY 2754, COMMERCIAL PRINTING, GRAVURE—Con.			
279637	Engraved printing cylinders for gravure printing.....	12.4	(1)
265001	Paperboard containers, boxes, and corrugated paperboard.....	8.7	(1)
970099	All other materials and components, parts, containers, and supplies.....	³ 260.4	1171.1
971000	Materials, ingredients, containers, and supplies, n.s.k. ²	128.9	205.5
INDUSTRY 2759, COMMERCIAL PRINTING, N.E.C.			
Materials, ingredients, containers, and supplies		3 279.5	3 212.7
262112	Newsprint	14.3	120.4
Uncoated paper:			
262121	Sheets.....	85.9	113.5
262122	Rolls	144.7	197.2
Coated paper:			
262123	Sheets.....	55.8	109.9
262124	Rolls	98.7	152.9
267231	Pressure-sensitive base stock, self-adhesive, including paper, film, foil, etc. ..	592.6	238.4
220011	Cloth and nonwoven fabrics for hardbound book covers	2.4	2.8
289101	Glues and adhesives	28.7	14.0
289301	Printing inks (complete formulations)	103.5	90.2
386101	Light sensitive films and papers	14.7	13.8
386100	Unexposed photosensitive printing plates.....	7.7	(1)
279600	Printing plates, prepared for printing	23.1	(1)
279637	Engraved printing cylinders for gravure printing.....	4.7	(1)
265001	Paperboard containers, boxes, and corrugated paperboard.....	27.4	(1)
970099	All other materials and components, parts, containers, and supplies.....	508.6	1514.9
971000	Materials, ingredients, containers, and supplies, n.s.k. ²	1 566.9	1 644.7
INDUSTRY 2761, MANIFOLD BUSINESS FORMS			
Materials, ingredients, containers, and supplies		3 110.2	3 159.2
262131	Coated paper.....	138.8	162.6
262140	Uncoated paper	1 380.8	1 496.3
262163	Carbonless paper	603.3	476.5
Carbon paper:			
262164	Carbonizing tissue stock for conversion into one-time carbon paper	16.5	37.5
395523	One-time carbon paper	55.1	116.1
267231	Pressure-sensitive base stock, self-adhesive, including paper, film, foil, etc. ..	73.2	(1)
289301	Printing inks (complete formulations)	32.9	29.1
265001	Paperboard containers, boxes, and corrugated paperboard.....	77.3	(1)
970099	All other materials and components, parts, containers, and supplies.....	201.7	1343.6
971000	Materials, ingredients, containers, and supplies, n.s.k. ²	530.5	497.5

¹Included in material code 970099.

²Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

³Data for material code 262112 are included in data for material code 970099.

Appendix A.

Explanation of Terms

This appendix is in two sections. Section 1 includes items requested of all establishments mailed census of manufactures forms including annual survey of manufactures (ASM) forms. Note that this section also includes several items (number of establishments and companies, value added, classes of products, and specialization and coverage ratios) not included on the report forms but derived from information collected on the forms. Section 2 covers supplementary items requested only from establishments included in the ASM sample. Results of the supplementary ASM inquiries are included in table 3c of this report.

SECTION 1. ITEMS COLLECTED OR DERIVED BASED ON ALL CENSUS OF MANUFACTURES (INCLUDING ASM) REPORT FORMS

Number of establishments and companies. A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

In this report, data are shown for establishments in operation at any time during the year. A comparison with the number of establishments in operation at the end of the year will be provided in the Introduction of the *General Summary* subject report.

Employment and related items. The report forms requested separate information on production workers for a specific payroll period within each quarter of the year and on other employees as of the payroll period which included the 12th of March.

All employees. This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave,

paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production workers. This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All other employees. This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It includes sales (including driver salespersons), sales delivery (highway truckdrivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office function, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations to the plant and utilized as a separate work force.

In addition to reports sent to operating manufacturing establishments, information on employment during the payroll period which included March 12 and annual payrolls also was requested of auxiliary units (e.g., administrative offices, warehouses, and research and development

laboratories) of multiestablishment companies. However, these figures are not included in the totals for individual industries shown in this report. They are included in the *General Summary* and geographic area reports as a separate category.

Payroll. This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year 1992. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' Social Security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' supplemental labor costs, both those required by Federal and State laws and those incurred voluntarily or as part of collective bargaining agreements. (Supplemental labor costs are explained later in this appendix.)

As in the case of employment figures, the payrolls of separate auxiliary units of multiestablishment companies are not included in the totals for individual industries or industry groups.

Production-worker hours. This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

Cost of materials. This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (1) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year, (2) electric energy purchased, (3) fuels consumed for heat, power, or the generation of electricity, (4) work done by

others on materials or parts furnished by manufacturing establishments (contract work), and (5) products bought and resold in the same condition. (See discussion of duplication of data below.)

Specific materials consumed. In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information on the establishments consuming less than a specified amount (usually \$25,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which either administrative records or short forms were used was imputed as "not specified by kind." (See Census of Manufactures for the importance of administrative records in the industry.)

Value of shipments. This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of "all other costs" (including company overhead) and profit. (See discussion of duplication of data below.)

Individual products. As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1992 census program, information was collected on the output of almost 11,000 individual product items. The term "product," as used in the census of manufactures, represents the finest level of detail for which output information was requested. Consequently, it is not necessarily synonymous with the term "product" as used in the marketing sense. In some cases, it may be much more detailed and, in other cases, it is more aggregative. For example, "pharmaceutical preparations" was distributed into over 100 terms; whereas, "motor gasoline" was reported as a single item.

Approximately 6,300 of the product items were listed separately on the 1992 census report forms. Data for

about 4,500 products were obtained in the monthly, quarterly, or annual surveys comprising the Current Industrial Reports series of the Census Bureau. Totals for the year 1992 for these items, as derived from the commodity surveys, are shown in the "products shipped" table.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1987 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

Classes of products. To summarize the product information, the separate products were aggregated into classes of products that, in turn, were grouped into all primary products of each industry. The code structure used is a seven-digit number for the individual product, a five-digit number for the class of product, and a four-digit number for the total primary products in an industry. (See Census of Manufactures, Industry Classification of Establishments, for application of the coding structure to the assignment of SIC codes for establishments.)

In the 1992 census, the 11,000 products were grouped into approximately 1,500 separate classes on the basis of general similarity of manufacturing processes, types of materials used, etc. However, the grouping of products was affected by the economic significance of the class and, in some cases, dissimilar products were grouped because the products were not sufficiently significant to warrant separate classes.

Duplication in cost of materials and value of shipments. The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages

in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Value added by manufacture. This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1a), value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

"Value added" avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

New and used capital expenditures. For establishments in operation and any known plants under construction, manufacturers were asked to report their new expenditures for (1) permanent additions and major alterations to

manufacturing establishments, and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

The totals for new expenditures include expenditures leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for used plant and equipment (although reported in the census), expenditures for land, and cost of maintenance and repairs charged as current operating expenses.

Manufacturers also were requested to report the value of all used buildings and equipment purchased during the year at the purchase price. For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. Furthermore, if the establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported under used capital expenditures.

Total expenditures for used plant and equipment is a universe figure; it is collected on all census forms. However, the breakdown of this figure between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. The data for total new capital expenditures, new building expenditures, and new machinery expenditures, as well as the data for total used expenditures, are shown in table 3b.

End-of-year inventories. Respondents were asked to report their 1991 and 1992 end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

SECTION 2. ITEMS COLLECTED ONLY ON ASM REPORT FORMS

The following items were collected only from establishments included in the ASM sample:

Supplemental labor costs. Supplemental labor costs are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they

Because of this change in reporting instructions, the 1982 through 1992 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown in table 1a of this report and in historical census of manufactures and annual survey of manufactures publications.

In using inventory data by stage of fabrication for "all industries" and at the two-digit industry level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by another establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for individual industries, industry groups, and "all manufacturing", which are aggregates of figures reported by establishments in specified industries.

Specialization and coverage ratios. These items are not collected on the report forms but are derived from the data shown in table 5b. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in tables 1a through 5a and data on product shipments shown in tables 6a through 6c.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

While the excluded items do benefit employees and all or part of their cost generally is similar to the items covered in the ASM labor costs statistics, accounting records generally do not provide reliable figures on net employee benefits of these types.

Retirements of depreciable assets. Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during 1992. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

Depreciation charges for fixed assets. This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

Rental payments. Total rental payments is collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets, and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

Depreciable assets. Total value of gross depreciable assets is collected on all census forms. However, the detail for depreciable assets is collected only on the ASM forms. The data encompass all fixed depreciable assets on the books of establishments at the beginning and end of the year. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all

buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets, including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year, rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress. In addition, respondents were requested to make certain that assets at the beginning of the year plus new and used capital expenditures, less retirements, equalled assets at the end of the year.

New and used capital expenditures. The data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used capital expenditures are collected on all census forms. However, the breakdown between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. (See further explanation on capital expenditures in section 1.)

Quantity of electric energy consumed for heat and power. Data on the cost of purchased electric energy are collected on all census forms. However, data on the quantity of purchased electric energy are collected only on the ASM forms. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

Breakdown of new capital expenditures for machinery and equipment. ASM establishments were requested to separate their capital expenditures for new machinery and equipment into (1) automobiles, trucks, etc., for highway use, (2) computers and peripheral data processing equipment, and (3) all other.

The category "automobiles, trucks, etc., for highway use" is intended to measure expenditures for vehicles designed for highway use that were acquired through a purchase or lease-purchase agreement. Vehicles normally operating off public highways (vehicles specifically designed to transport materials, property, or equipment on mining, construction, logging, and petroleum development projects) are excluded from this item.

Foreign content of cost of materials. Establishments included in the ASM sample panel were requested to provide information on foreign-made materials purchased or transferred from foreign sources. This includes materials acquired from a central warehouse or other domestic establishment of the same company but made in an operation outside of the 50 States, District of Columbia, Puerto Rico, or U.S. territories.

Cost of purchased services. ASM establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflect the costs paid directly by the establishment, and exclude salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment, such as painting, roof repairs, replacing parts, and overhauling equipment. Such payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that were capitalized are considered capital expenditures for used buildings and machinery and are, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Three basic approaches were utilized to produce these statistics.

1. For items 1 through 6, data were estimated (imputed) for all non-ASM establishments using the available data in the establishment record and industry-based parameters. The statistics were then generated by simply tabulating all census records including the imputed value for non-ASM establishments and the unweighted value for ASM establishments. Separate imputation rates were developed and are shown in the table. For quantity of purchased electricity for heat and power (item 7), a similar procedure was used; however, the imputation parameters were geographically-based instead of industry-based. For quantities of generated less sold electricity, no imputation was performed for non-ASM establishments. The estimates for these items are simply tabulations of unweighted ASM values.

Since the published statistics for these items were developed from the complete census universe and not just the ASM establishments, there are no sampling variances associated with these statistics. However, there is an unknown level of bias for each of the items due to the imputation of the non-ASM establishments. This bias is felt to be small due to the strong correlation between the items being imputed and the collected items that were used to generate the impute values.

2. For items 8 and 9, the estimates were developed using a ratio estimation methodology. For item 8, an estimate of the breakout of new capital expenditures for machinery and equipment into the three categories was made from ASM establishments reporting these categories. The estimated proportions were then applied to the corresponding census value for new capital expenditures for machinery and equipment to produce the estimates.

The estimates for item 9, foreign content of cost of materials, were developed in a similar manner based on costs of parts, supplies, and components (item 5a) as the control total for the three categories.

For items 8 and 9, an adjustment ratio of the following form was computed:

$$R_j = \frac{NMc}{TMEasm}$$

where:

NMc = the census value of new capital expenditures for machinery and equipment

TMEasm = the weighted ASM value of new capital expenditures for machinery and equipment from reporters of the detailed breakout data

3. For item 10, cost of purchased services, the estimates were made by simply tabulating weighted data for all the ASM records that reported the item. A response coverage ratio (a measure of the extent to which respondents reported for each item) is shown in table 3c for the types of services. It is derived for each item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight, see appendix B) for those ASM establishments that reported the specific inquiry to the weighted total employment for all ASM establishments classified in the industry.

Appendix B.

Annual Survey of Manufactures Sampling and Estimating Methodologies

DESCRIPTION OF SURVEY SAMPLE

The annual survey of manufactures (ASM) contains two components. The mail portion of the survey is a probability sample of about 64,000 manufacturing establishments selected from a total of about 216,000 establishments. These 216,000 establishments represent all manufacturing establishments of multiunit companies and all single-establishment companies mailed schedules in the 1987 Census of Manufactures. This mail portion is supplemented annually by a Social Security Administration list of new manufacturing establishments opened after 1987 and a list of new multiunit manufacturing establishments identified from the Census Bureau's Company Organization Survey.

For the current panel, all establishments of companies with 1987 shipments in manufacturing in excess of \$500 million were included in the survey panel with certainty. There are approximately 500 such companies collectively accounting for approximately 18,000 establishments. For the remaining portion of the mail survey, the establishment was defined as the sampling unit. For this portion, all establishments with 250 employees or more and establishments with a very large value of shipments also were included in the survey panel with certainty. A total of 12,100 establishments were selected from this portion of the universe with certainty. Therefore, of the 64,000 manufacturing establishments included in the ASM panel, approximately 31,000 are selected with certainty. These certainty establishments collectively account for approximately 80 percent of the total value of shipments in the 1987 census.

Smaller establishments in the remaining portion of the mail survey were sampled with probabilities ranging from 0.999 to 0.005 in accordance with mathematical theory for optimum allocation of a sample. The probabilities of selection assigned to the smaller establishments were proportional to measures of size determined for each establishment. The measures of size depend directly upon each establishment's 1987 product class values and the historic variability of the year-to-year shipments of each product class. Product classes displaying more volatile year-to-year change in shipments at the establishment level were sampled at a heavier rate.

This method of assigning measures of size was used in order to maximize the precision (that is, minimize the variance of estimates of the year-to-year change) in the value of product class shipments. Implicitly, it also gave weight differences in employment, value added, and other

general statistics, since these are highly correlated with value of shipments. Individual sample selection probabilities were obtained by multiplying each establishment's final measure of size by an overall sampling fraction coefficient calculated to yield a total expected sample size.

The sample selection procedure gave each establishment in the sampling frame an independent chance of selection. This method of independent selection permits the rotation of small establishments out of a given sample panel without introducing a bias into the survey estimates.

The nonmail portion of the survey includes all single-establishment companies that were tabulated as administrative records in the 1987 Census of Manufactures. Although this portion contained approximately 134,000 establishments, it accounted for less than 2 percent of the estimate for total value of shipments at the total manufacturing level. This portion was not sampled; rather, the data for every establishment in this group were estimated based on selected information obtained annually from the administrative records of the Internal Revenue Service and the Social Security Administration. This administrative-records information, which includes payroll, total employment, industry classification, and physical location of the establishment, was obtained under conditions which safeguard the confidentiality of both tax and census records. Estimates of data other than payroll and employment for these small establishments were developed from industry averages.

The corresponding estimates for the mail and nonmail establishments were added together, along with the base-year differences, as defined in the Description of Estimating Procedure section, to produce the figures shown in this publication.

DESCRIPTION OF ESTIMATING PROCEDURES

Most of the ASM estimates for the years 1988-1991 were computed using a difference estimation procedure. For each item, a base-year difference was developed. This base-year difference is equal to the difference between the 1987 census published number for an item total and the linear ASM estimate of the total for 1987. The ASM linear estimate was obtained by multiplying each sample establishment's data by its sample weight (the reciprocal of its probability of selection) and summing the weighted values.

These base-year differences were then added to the corresponding current-year linear estimates, which include the sum of the estimates for the mail and nonmail

establishments, to produce the estimates for the years 1983-1991. Estimates developed by this procedure usually are far more reliable than comparable linear estimates developed from the current sample data alone.

However, the 1992 sample estimates for the purchased service items, shown in table 3c, are strictly ASM linear estimates developed only from ASM establishments that reported the specific item.

The remaining estimates in table 3c, showing the breakdown of expenditures for new machinery and equipment and costs of parts (separated into purchases from foreign sources and purchases from domestic sources), were computed as ratio estimates. To do this, linear estimates of the new machinery detail items were developed from the ASM establishments and were ratio adjusted to the corresponding census total for new machinery. In a similar fashion, the ASM linear estimates of the detailed purchased materials items were ratio adjusted to the corresponding census total for cost of parts.

QUALIFICATIONS OF THE DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sampled lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the differences between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of the estimates.

The particular sample selected for the ASM is one of a large number of similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretical, comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected statistics in this report. They are presented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

1. From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.
2. From two standard errors below to two standard errors above the derived estimate for about 19 of 20 of all possible samples.
3. From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown as 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected in the course of the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or only moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown.

The concept of complete coverage under the conditions prevailing for the ASM is not identical to the complete coverage of the census of manufactures, as the censuses have been conducted. Nearly all types of operational errors that affect the ASM also occur in the censuses. The ASM and the censuses, are conducted under quite different conditions, and operational errors can be better controlled in the ASM than in the censuses. As a result, for many of the census figures, the errors are of the same order of size as the total errors of the corresponding annual survey estimates. The differences between the census and ASM operating conditions also disturb, to some degree, the comparability of the ASM and census data.

Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be of limited reliability. However, the figure may be combined with higher-level totals, creating a broader aggregate, which then may be of acceptable reliability.

Appendix C. Product Code Reference Tables

Part 1. Comparability of Product Classes and Product Codes That Changed: 1992 to 1987

1992	1987	1992	1987	1992	1987	1992	1987
27111 24	27111 22	27523 18	27523 13	2759B 26	27597 26	27617 63	27617 00
27111 26	27111 22			2759B 28	27597 28	27617 65	27617 00
27111 34	27111 32	27525 45	27525 51	2759B 30	27597 24	27617 73	27617 00
27111 36	27111 32	27525 45	27525 53	2759B 30	27597 30	27617 75	27617 00
27111 44	27111 42	27525 52	27525 51				
27111 46	27111 42	27525 54	27525 53	2759C	27597	27824 41	27824 00
27111 54	27111 52			2759C 29	27597 38	27824 45	27824 00
27111 56	27111 52	27526 77	27526 76	2759C 31	27597 12	27824 51	27824 00
27111 58	27111 91	27526 77	27526 78	2759C 32	27597 32		
		27526 84	27526 98	2759C 34	27597 34	27825 01	27825 00
		27526 97	27526 98	2759C 36	27597 36	27825 03	27825 00
27211 12	27211 11			2759C 38	27597 38	27825 06	27825 00
27211 12	27211 61					27825 08	27825 00
27211 14	27211 15	27592 12	27592 11			27825 11	27825 00
27211 14	27211 61	27592 12	27592 15	27612 11	27612 00	27825 22	27825 00
		27592 14	27592 13	27612 13	27612 00		
2731H	2731F	27592 14	27592 15	27612 15	27612 00		
2731H 00	2731F 00	27592 16	27592 15	27612 53	27612 00		
		27592 16	27592 17	27612 55	27612 00	27910 32	27910 11
		27592 18	27592 15	27612 61	27612 00	27910 34	27910 15
27417 16	27417 15						
27417 16	27417 17			27613 11	27613 00	27961 11	27961 13
		27596 16	27596 25	27613 13	27613 00	27961 17	27961 17
2741B 18	2741B 19	27596 27	27596 25			27961 31	27961 23
2741B 20	2741B 19			27615 31	27615 00	27961 31	27961 29
2741B 29	2741B 91			27615 35	27615 00		
2741B 71	2741B 21	27599 33	27599 32	27615 41	27615 00	27963 30	27963 15
2741B 71	2741B 91	27599 35	27599 32	27615 43	27615 00	27963 30	27963 35
		2759B	27597	27615 45	27615 00	27963 52	27963 72
27522 11	27522 15	2759B 00	27597 00	27615 55	27615 00	27963 69	27963 61
27522 11	27522 16	2759B 14	27597 14	27615 61	27615 00	27963 69	27963 63
27522 13	27522 16	2759B 16	27597 16	27615 63	27615 00	27963 69	27963 65
27522 13	27522 19	2759B 18	27597 18	27615 65	27615 00	27963 70	27963 40
27522 17	27522 16	2759B 20	27597 20			27963 70	27963 67
27522 17	27522 18	2759B 22	27597 22	27617 61	27617 00	27963 70	27963 71

Part 2. Comparability of Product Classes and Product Codes That Changed: 1987 to 1992

1987	1992	1987	1992	1987	1992	1987	1992
27111 22	27111 22	27522 15	27522 11	27597 00	2759B 00	27615 00	27615 55
27111 22	27111 24	27522 16	27522 11	27597 12	2759C 31	27615 00	27615 61
27111 22	27111 26	27522 16	27522 13	27597 14	2759B 14	27615 00	27615 63
27111 32	27111 32	27522 16	27522 17	27597 16	2759B 16	27615 00	27615 65
27111 32	27111 34	27522 18	27522 17	27597 18	2759B 18		
27111 32	27111 36	27522 19	27522 13	27597 20	2759B 20	27617 00	27617 61
27111 42	27111 42			27597 22	2759B 22	27617 00	27617 63
27111 42	27111 44			27597 24	2759B 30	27617 00	27617 65
27111 42	27111 46	27523 13	27523 18	27597 26	2759B 26	27617 00	27617 73
27111 52	27111 52			27597 28	2759B 28	27617 00	27617 75
27111 52	27111 54			27597 30	2759B 30		
27111 52	27111 56	27525 51	27525 45			27824 00	27824 41
27111 91	27111 58	27525 51	27525 52	27597 32	2759C 32	27824 00	27824 45
		27525 53	27525 45	27597 34	2759C 34	27824 00	27824 51
		27525 53	27525 54	27597 36	2759C 36		
27211 11	27211 12	27526 76	27526 77	27597 38	2759C 29	27825 00	27825 01
27211 15	27211 14	27526 78	27526 77	27597 38	2759C 38	27825 00	27825 03
27211 61	27211 12	27526 98	27526 78			27825 00	27825 06
27211 61	27211 14	27526 98	27526 84			27825 00	27825 08
		27526 98	27526 97	27599 32	27599 33	27825 00	27825 11
				27599 32	27599 35	27825 00	27825 22
2731F	2731F	27592 11	27592 12			27910 11	27910 32
		27592 13	27592 14	27612 00	27612 11	27910 15	27910 34
2731F	2731H	27592 15	27592 12	27612 00	27612 13		
		27592 15	27592 14	27612 00	27612 15	27961 13	27961 11
2731F 00	2731F 00	27592 15	27592 16	27612 00	27612 53	27961 17	27961 31
2731F 00	2731H 00	27592 15	27592 18	27612 00	27612 55	27961 23	27961 31
		27592 17	27592 16	27612 00	27612 61	27961 29	27961 31
		27592 19	27592 18				
27417 15	27417 16			27613 00	27613 11	27963 15	27963 30
27417 17	27417 16	27596 25	27596 16	27613 00	27613 13	27963 35	27963 30
		27596 25	27596 27			27963 40	27963 70
2741B 19	2741B 18			27615 00	27615 31	27963 61	27963 69
2741B 19	2741B 20			27615 00	27615 35	27963 63	27963 69
2741B 21	2741B 71	27597	2759B	27615 00	27615 41	27963 65	27963 69
2741B 91	2741B 29			27615 00	27615 43	27963 67	27963 70
2741B 91	2741B 71	27597	2759C	27615 00	27615 45	27963 71	27963 70
						27963 72	27963 52

Part 3. Current Industrial Reports by Product Code

[Not applicable for this report]

Publication Program

1992 CENSUS OF MANUFACTURES

Publications of the 1992 Census of Manufactures, containing preliminary and final data on manufacturing establishments in the United States, are described below. Publications order forms for the specific reports may be obtained from any Department of Commerce district office or from Data User Services Division, Customer Services, Bureau of the Census, Washington, DC 20233-8300.

Preliminary Reports

Industry series—83 reports (MC92-I-20A(P) to -39D(P))

Preliminary industry data are issued in 83 separate reports covering 459 industries. Preliminary summary data for the United States and States are released in one report.

Final Reports

Industry series—83 reports (MC92-1-20A to -39D)

Each of the 83 reports provides information for a group of related industries ("dairy products" includes industries for butter, cheese, milk, etc.). Final figures for the United States are shown for each of the 459 manufacturing industries on quantity and value of products shipped and materials consumed, cost of fuels and electric energy, capital expenditures, assets, rents, inventories, employment, payroll, payroll supplements, hours worked, value added by manufacture, number of establishments, and number of companies. Comparative statistics for earlier years are provided where available.

For each industry, data on value of shipments, value added by manufacture, capital expenditures, employment, and payroll are shown by employment-size class of establishment, State, and degree of primary product specialization.

Geographic area series—51 reports (MC92-A-1 to -51)

A separate report is being published for each State and the District of Columbia. Each report presents data for industry groups and industries on value of shipments, cost of materials, value added by manufacture, employment, payroll, hours worked, new capital expenditures, and number of manufacturing establishments for the State, MA's, counties, and selected places. Comparative statistics for earlier census years are shown for the State and large MA's. Manufacturing totals are presented for each county and for places with significant manufacturing activity. Detailed statistics (including inventories, assets, rents, and energy costs) are presented only in statewide totals.

Subject series—3 reports (MC92-S-1 to -3)

Each of the three reports contains detailed statistics for an individual subject, such as concentration ratios in manufacturing, manufacturers' shipments to the Federal Government, and a general national-level summary.

Reference series—1 report (MC92-R-1)

The *Numerical List of Manufactured and Mineral Products* includes a description of the principal products and services published in the 1992 Censuses of Manufactures and Mineral Industries.

Location of Manufacturing Plants—1 report (MC92-LM)

This report includes data for number of establishments by four-digit SIC industry and by employment-size class for counties, incorporated places of 2,500 inhabitants or more, and Zip Codes for each State. This report is available only on compact disc-read only memory (CD-ROM).

Analytical Reports—2 reports (AR92-1 and -2)

Exports From Manufacturing Establishments (AR92-1)

This report presents data on exports by two- and three-digit SIC industry groups for the United States and States. Information is presented on value of direct report shipments and estimates of the employment required to manufacture these products. Included are estimates of employment in manufacturing and nonmanufacturing establishments that supply parts, materials, and services for production of manufactured exports.

Selected Characteristics of Manufacturing Establishments That Export (AR92-2)

This report presents data on the number of manufacturing companies and establishments that export by major group, State, employment size, and ratios of exports to shipments.

Electronic Media

All data included in the printed reports are available on CD-ROM. The CD-ROM's provide the same information found in the reports as well as additional information not published in the final reports, such as location of manufacturing plants. Electronic media products are available for users who wish to summarize, rearrange, or process large amounts of data. These products, with corresponding technical documentation, are sold by Data User Services Division, Customer Services, Bureau of the Census, Washington, DC 20233-8300.

OTHER ECONOMIC CENSUSES REPORTS

Data on retail trade, wholesale trade, financial, insurance, real estate, service industries, construction industries, mineral industries, transportation, communications, utilities, enterprise statistics, minority-owned businesses, and women-owned businesses also are available from the 1992 Economic Census. A separate series of reports covers the census of outlying areas—Puerto Rico, Virgin Islands of the United States, Guam, and the Commonwealth of the Northern Mariana Islands. Separate announcements describing these reports are available free of charge from Data User Services Division, Customer Services, Bureau of the Census, Washington, DC 20233-8300.